

**International Union for the Scientific Study of Population (IUSSP)**  
*Union internationale pour l'étude scientifique de la population (UIESP)*

**XXVII International Population Conference**  
***XXVII<sup>e</sup> Congrès international de la population***

**ABSTRACTS / RÉSUMÉS**

**Busan, Korea / Corée**  
**26-31 August 2013**

IUSSP – UIESP  
3-5, rue Nicolas, 75980 Paris cedex 20, France  
Tel: +33 1 56 06 21 73 Fax: +33 1 56 06 22 04  
E-mail: [iussp@iussp.org](mailto:iussp@iussp.org) / web: [www.iussp.org](http://www.iussp.org)

## NOTE

This publication contains the abstracts of papers presented in regular sessions and received by 15 July 2013. Abstracts are published with almost no copy-editing. Any opinions expressed in the abstracts are those of the author(s) and not the IUSSP.

Abstracts and, if available, full papers are accessible online on the IUSSP website: <http://www.iussp.org/en/event/17/programme>.

\*\*\*\*

*Cette publication comprend les résumés des communications présentées dans le cadre des séances régulières. Seuls les résumés reçus avant l'échéance du 15 juillet 2013 ont pu être publiés. Les résumés sont publiés tels que fournis par les auteurs. Tout avis exprimé dans les résumés demeure de l'entière responsabilité de l'auteur et non de l'UIESP.*

*Les résumés, et si elles sont disponibles, les communications complètes sont accessibles en ligne sur le site web de l'UIESP : <http://www.iussp.org/en/event/17/programme>.*

## Table of Contents / *Table des matières*

Regular Sessions <i>Séances régulières</i>	4
Abstracts <i>Résumés</i>	17
Index of Paper Authors <i>Index des auteurs de communications</i>	366

# Regular Sessions / Séances régulières

## Tuesday 27 August / Mardi 27 août

**8:30 - 10:00**

- 2 Access to and impact of HAART / *Accessibilité et impact des traitements antirétroviraux hautement actifs (HAART)*
- 3 Low fertility groups in developing countries / *Groupes à faible fécondité dans les pays en développement*
- 4 Transitions in the spousal selection process / *Transitions dans le processus de sélection du conjoint*
- 5 Migrant aspirations and strategies / *Aspirations et stratégies des migrants*
- 6 Internal migration and urbanization: special applications / *Migrations internes et urbanisation : études de cas*
- 7 Population ageing and intergenerational transfers: challenges for social welfare policies / *Vieillesse de la population et transferts intergénérationnels : défis pour les politiques sociales*
- 8 Population and development / *Population et développement*
- 9 Promoting sexual and reproductive health among adolescents: What works? / *Promouvoir la santé sexuelle et reproductive chez les adolescents : qu'est-ce qui fonctionne ?*
- 10 Depopulation at the subnational level: causes and implications / *La dépopulation à l'échelle infranationale : causes et conséquences*
- 11 Methods in adult health and mortality / *Les méthodes sur la mortalité et la santé adulte*
- 12 Infertility: addressing its causes and providing treatment / *Infécondité : s'atteler aux causes et fournir des traitements*
- 13 Sexuality and reproductive health / *Sexualité et santé de la reproduction*
- 14 Multiple faces of the health transition / *Les multiples facettes de la transition sanitaire*
- 15 Political demography of the Asia-Pacific region / *Démographie politique de la région Asie-Pacifique*
- 16 Marital status and mortality / *Statut matrimonial et mortalité*

## Tuesday 27 August / Mardi 27 août

**10:30 - 12:00**

- 17 Reducing the vulnerability of adolescents and young people to HIV and STIs / *Réduire la vulnérabilité des adolescents et des jeunes à l'infection par le VIH et les MST*
- 18 Any prospects of fertility recovery in low-fertility societies? / *Quelles perspectives de reprise de la fécondité dans les sociétés à faible fécondité ?*
- 19 Trends in the rates of mixed marriages / *Tendances des taux de mariages mixtes*
- 20 Global migration trends and determinants / *Tendances et déterminants des migrations internationales*
- 21 Internal migration and family dynamics / *Migrations internes et dynamiques familiales*
- 22 Labour force participation and productivity at older ages / *Participation au marché du travail et productivité des travailleurs âgés*
- 23 Population and poverty / *Population et pauvreté*

- 24 Raising young people's awareness of sexual and reproductive health matters: Opportunities and challenges / *La sensibilisation des jeunes aux questions de santé sexuelle et reproductive : opportunités et défis*
- 25 Population dynamics and climate change / *Dynamique démographique et changement climatique*
- 26 Formal demography, innovative methodologies, and their applications / *Méthodes démographiques, méthodologies innovantes et applications*
- 27 Factors associated with maternal health seeking and utilization / *Facteurs associés à la demande et à l'utilisation des services de santé maternelle*
- 28 Repositioning family planning / *Repositionner la planification familiale*
- 29 Nutrition disorders, health and mortality / *Troubles de la nutrition, santé et mortalité*
- 30 Trends of demographic changes and prospects in North Korea / *Tendances démographiques et perspectives en Corée du Nord*
- 31 Life-course influences on health and mortality / *Influences du parcours de vie sur la santé et la mortalité*

## **Tuesday 27 August / Mardi 27 août**

**13:30 - 15:00**

- 41 Life-course methodology / *Méthodologie biographique*
- 42 Education and fertility / *Education et fécondité*
- 43 Crisis mortality: documenting the effects of conflict, famines and natural disasters / *Mortalité de crise : comment étudier les effets des conflits, des famines et des catastrophes naturelles*
- 44 Understanding the global rise in cohabitation / *Comprendre l'augmentation généralisée de la cohabitation*
- 45 New perspectives on migration determinants / *Nouvelles approches sur les déterminants de la migration*
- 46 Indirect methods of mortality and fertility estimation: new techniques for new realities / *Méthodes indirectes d'estimation de la mortalité et de la fécondité : de nouvelles techniques pour de nouvelles réalités*
- 47 National transfer accounts and what they reveal about patterns of intergenerational transfers / *Les Comptes de transfert nationaux nous renseignent-ils sur les formes de transferts intergénérationnels ?*
- 48 Policy implications of the multidimensional nature of poverty / *Les implications politiques de la nature multidimensionnelle de la pauvreté*
- 49 The determinants of health behaviours among adolescents / *Déterminants des comportements de santé chez les adolescents*
- 50 Gender and population: policy and policy outcomes / *Genre et population : les politiques publiques et leurs résultats*
- 51 Evaluation of maternal & child health policies, programmes and services / *L'évaluation des politiques, des programmes et des services de santé maternelle et infantile*
- 52 Evaluation of family planning and reproductive health programmes / *Evaluation des programmes de planification familiale et de santé de la reproduction*
- 53 Age patterns of adult mortality in relation to causes of death and increasing longevity / *Profil par âge de la mortalité adulte en lien avec les causes de décès et l'augmentation de la longévité*

- 54 Policy response to the lowest-low fertility in the Asia-Pacific region / *Réponse politique à la très faible fécondité dans la région Asie-Pacifique*
- 55 The Madrid International Plan of Action on Ageing: Where are we ten years later? / *Le Plan d'action international de Madrid sur le vieillissement : Où en sommes-nous dix ans après ?*

**Tuesday 27 August / Mardi 27 août**

**15:30 - 17:00**

- 56 Assessing HIV risk in hard-to-reach populations / *L'évaluation du risque VIH auprès de populations difficiles à atteindre*
- 57 Economic and cultural factors influencing fertility preferences / *Les facteurs économiques et culturels qui influencent les préférences de fécondité*
- 58 Demographic effects of famines / *Les effets démographiques des famines*
- 59 The meaning of cohabitation / *La signification de la cohabitation*
- 60 The effects of migration on areas of destination / *L'impact des migrations sur les pays de destination*
- 61 Advances in life table analysis / *Avancées dans l'analyse des tables de survie*
- 62 Intergenerational transfers over time and space / *Les transferts intergénérationnels dans le temps et dans l'espace*
- 63 The relevance of population for the achievement of the Millennium Development Goals / *La pertinence de la variable population pour la réalisation des Objectifs du Millénaire pour le développement*
- 64 Adolescent health, risk behaviours, and mortality / *Santé, comportements à risque et mortalité des adolescents*
- 65 Education and labour force / *Education et emploi*
- 66 Maternal mortality: measurement and causes / *Mortalité maternelle : mesure et causes*
- 67 Evaluation of Family Planning/Reproductive Health policy / *L'évaluation des politiques de planification familiale et de santé de la reproduction*
- 68 Extended longevity. Observation and methods / *Grande longévité. Observation et méthodes*
- 69 Socioeconomic development and demographic change in South Korea / *Développement socio-économique et évolution démographique en Corée du Sud*
- 70 Distance-based training tools for population science / *Des outils de formation à distance pour les sciences de la population*

**Wednesday 28 August / Mercredi 28 août**

**8:30 - 10:00**

- 72 Mortality decline in developing countries and its theoretical implications / *Baisse rapide de la mortalité dans les pays en développement et implications théoriques*
- 73 Disentangling individual, familial and contextual factors influencing fertility / *Démêler les facteurs individuels, familiaux et contextuels influençant la fécondité*
- 74 Same-sex unions and families / *Unions homosexuelles et familles*
- 75 Immigrant integration and settlement / *Etablissement et intégration des immigrants*
- 76 Internal migration and urbanization: insertion and selectivity / *Migrations internes et urbanisation: Insertion et sélectivité*

- 77 Population ageing and intergenerational relations / *Vieillesse démographique et relations intergénérationnelles*
- 78 The Demographic “Dividends”: challenges for the near future / *Les « dividendes démographiques » : des défis pour l’avenir proche*
- 79 Causes and consequences of the baby boom / *Causes et conséquences du baby-boom*
- 80 Adolescent and youth transitions: school and work / *Transitions des adolescents et des jeunes : école et emploi*
- 81 Meeting the MDGs in Africa: Progress and prospects for post 2015. Organized by the Union for African Population Studies (UAPS) / *La réalisation des OMD en Afrique : bilan et perspectives pour l’après 2015 - Organisé par l’Union pour l’Etude de la Population Africaine (UEPA)*
- 82 Contraceptive use dynamics in developing countries / *L’utilisation de la contraception dans les pays en développement*
- 83 Issues in integration of SRH services / *Les enjeux de l’intégration des services de santé sexuelle et reproductive*
- 84 Gender differences in health and mortality / *Différences de genre en santé et mortalité*
- 85 International migration of students and institutions of higher education in the Asia-Pacific region / *Migrations internationales des étudiants et institutions d’enseignement supérieur dans la région Asie-Pacifique*
- 86 New techniques for estimating migration / *Nouvelles techniques d’estimation des migrations*

### **Wednesday 28 August / Mercredi 28 août**

**10:30 - 12:00**

- 87 The impact of economic downturns on health and mortality / *Conséquences de la récession économique sur la santé et la mortalité*
- 88 Can the speed of fertility decline in sub-Saharan Africa be accelerated? / *Le déclin de la fécondité en Afrique sub-saharienne peut-il être accéléré ?*
- 89 The role of extended kin in shaping families / *Le rôle de la famille élargie dans la constitution des familles*
- 90 Immigrant families, networks, and 2nd generation / *Les familles immigrées, les réseaux et la 2ème génération*
- 91 Internal migration and urbanization: Overview / *Migrations internes et urbanisation : vue d’ensemble*
- 92 Women in ageing societies / *Les femmes dans les sociétés vieillissantes*
- 93 Demographic windows of opportunity and economic growth / *Fenêtres d’opportunité et croissance économique*
- 94 Indirect estimation of mortality assessment and improvement of methods / *Estimation indirecte de la mortalité : évaluation et amélioration des méthodes*
- 95 Early work experience and the future of youth in developing countries / *Précocité de la première expérience de travail et avenir des jeunes dans les pays en développement*
- 96 Family dynamics and educational outcomes for primary level / *Dynamiques familiales et réussite scolaire au niveau primaire*
- 97 Improving reproductive health services: Is integration with primary healthcare better than vertical programmes? / *Améliorer les services de santé de la reproduction : intégration aux soins de santé primaires ou programmes verticaux ?*

- 98 Critical support for improving access to reproductive health services / *Quelle sont les démarches essentielles pour améliorer l'accès aux services de santé reproductive ?*
- 99 Gender differences in child health and mortality / *Différences entre sexes en matière de santé et de mortalité infantile*
- 100 Longevity, family life and social class in the Asia-Pacific region / *Longévité, vie familiale et classe sociale dans la région Asie-Pacifique*
- 101 Spatial diffusion of demographic behaviour / *Diffusion spatiale des comportements démographiques*

**Wednesday 28 August / Mercredi 28 août**

**13:30 - 15:00**

- 110 Gender differences in life expectancy and mortality / *Différences entre sexes dans l'espérance de vie et la mortalité*
- 111 Childlessness: acceptability and consequences / *Une vie sans enfant : acceptabilité et conséquences*
- 112 Family relationships beyond the household / *Relations familiales au-delà du ménage*
- 113 Economic integration of immigrants / *L'intégration économique des immigrants*
- 114 Internal migration and urbanization: Are patterns changing? (1) / *Migrations internes et urbanisation : une évolution est-elle en cours? (1)*
- 115 Subjective health of older population / *État de santé subjectif des populations âgées*
- 116 Financing universal health care in developing countries / *Le financement de systèmes de soins de santé universelle dans les pays en développement*
- 117 Data quality in demographic surveys: tests and experiments / *Qualité des données des enquêtes démographiques : tests et approches expérimentales*
- 118 Public policies and programmes: How far do children benefit from these? / *Dans quelle mesure les enfants bénéficient-ils des programmes et des politiques publiques ?*
- 119 Anthropological demography / *Démographie anthropologique*
- 120 Demand for long acting family planning methods / *Demande contraceptive : les méthodes contraceptives à effet prolongé*
- 121 Couple fertility and contraceptive decision-making / *Fécondité des couples et processus de décision en matière contraceptive*
- 122 Trends and differentials in disability: challenges in measurement / *Tendances et différentiels en matière de handicap : comment les mesurer ?*
- 123 The effects of demographic changes on housing in the Asia-Pacific region / *Les effets des changements démographiques sur le logement dans la région Asie-Pacifique*
- 124 Neighbourhood effects and demographic outcomes / *Effets de voisinage et comportements démographiques*

**Wednesday 28 August / Mercredi 28 août**

**15:30 - 17:00**

- 125 Health and mortality in Eastern Europe / *Santé et mortalité en Europe de l'Est*
- 126 Fertility and HIV / *Fécondité et VIH*
- 127 Work-family interface and gender equality / *Rapports travail-famille et inégalités de genre*

- 128 Integration of immigrants in different contexts / *Intégration des immigrants dans différents contextes*
- 129 Internal migration and urbanization: Are patterns changing? (2) / *Migrations internes et urbanisation : une évolution est-elle en cours? (2)?*
- 130 Socioeconomic status and health among older population / *Statut socioéconomique et santé dans la population âgée*
- 131 Pay-for-Performance and other mechanisms to achieve universal health care / *Les « dividendes démographiques » : des défis pour l'avenir proche*
- 132 Data quality in demographic surveys / *Qualité des données dans les enquêtes démographiques*
- 133 The effects of violence on adolescents and youth / *Les effets de la violence sur les adolescents et les jeunes*
- 134 Marriage and gender relations / *Mariage et relations de genre*
- 135 Fertility intentions over time / *Les intentions de fécondité au fil du temps*
- 136 Reproductive health expenditure and quality of service / *Dépenses de santé reproductive et qualité de service*
- 137 Disability measures for specific groups and domains / *Mesures du handicap pour des groupes et sur des domaines spécifiques*
- 138 Emergence of "Smart Technology" and its contributions for demographic processes in both advanced and developing countries / *Les technologies « Smart » et leur contribution aux processus démographique, dans les pays du nord et du sud.*
- 139 Macro and micro perspectives on education/fertility dynamics / *Approches macro et micro sur les dynamiques éducation/fécondité*

#### **Thursday 29 August / Jeudi 29 août**

**8:30 - 10:00**

- 141 Estimating needs for HIV services: current shortfalls and future forecasts / *Estimer les besoins des services VIH : insuffisances actuelles et prévisions pour l'avenir*
- 142 Low fertility: theories and empirical evidence / *Faible fécondité : théories et données empiriques*
- 143 Union dissolution and remarriage / *Ruptures d'unions et remariage*
- 144 Impact of migration on the well-being of left-behind children / *L'impact de l'émigration sur le bien-être des enfants laissés derrière*
- 145 Health and ageing in low, middle and high-income countries (1) / *Santé et vieillissement dans les pays à revenus faibles, intermédiaires et élevés (1)*
- 146 Population, environment, health, and development in Africa / *Population, environnement, santé et développement en Afrique*
- 147 Assessing quality in qualitative research / *Evaluer la qualité dans la recherche qualitative*
- 148 Children and youth / *Enfants et jeunes*
- 149 Latin America: the role of population dynamics in a sustainable development strategy - Organized by the Latin American Population Association (ALAP) / *Amérique latine : la dynamique démographique dans les stratégies de développement durable - Organisé par l'Association latino-américaine de population (ALAP)*
- 150 Prenatal sex selection / *Sélection prénatale en fonction du sexe*

- 151 Sexual and reproductive health services to meet men's needs / *Les services de santé sexuelle et reproductive pour les besoins de la population masculine*
- 152 Advances in research on abortion in sub-Saharan Africa / *Avancées de la recherche sur l'avortement en Afrique subsaharienne*
- 153 Child health in urban areas / *Santé des enfants en milieu urbain*
- 154 Gender and population: theoretical and methodological issues / *Genre et population : questions théoriques et méthodologiques*
- 155 Biological and behavioural aspects of health and mortality / *Santé et mortalité : aspects biologiques et comportementaux*

**Thursday 29 August / Jeudi 29 août**

**10:30 - 12:00**

- 156 The demographic and socioeconomic consequences of HIV/AIDS / *Conséquences démographiques et socioéconomiques du VIH/sida*
- 157 Socioeconomic differentials in fertility and family formation / *Différentiels socio-économiques en matière de fécondité et de formation de la famille*
- 158 The changing patterns of marriage and partnerships and their effects on fertility / *Evolution des formes de mariage et d'union et conséquences pour la fécondité*
- 159 Trends in skilled migration: causes and consequences / *Tendances de la migration qualifiée : causes et conséquences*
- 160 Health and ageing in low, middle and high-income countries (2) / *Santé et vieillissement dans les pays à revenus faibles, intermédiaires et élevés (2)*
- 161 Migration, poverty, and development / *Migration, pauvreté et développement*
- 162 Advances in population projections / *Les avancées récentes dans les projections démographiques*
- 163 Parental and public investment in children and adolescents / *Investissement parental et public pour les enfants et les adolescents*
- 164 Gender and population: the educational experience / *Genre et population : l'expérience éducative*
- 165 Inequalities in education / *Inégalités dans le domaine de l'éducation*
- 166 Reproductive ambivalence and uncertainty / *Ambivalence et incertitude vis-à-vis de la reproduction*
- 167 Advances in research on unsafe abortion and its consequences / *Les progrès de la recherche sur l'avortement à risque et sur ses conséquences*
- 168 Transition and urban health / *Transitions de santé en milieu urbain*
- 169 Getting published in peer-reviewed journals: What editors look for / *Publier dans des revues à comité de lecture : les exigences des comités de rédaction*
- 170 Evolutionary demography / *Démographie évolutionniste*

**Thursday 29 August / Jeudi 29 août**

**13:30 - 15:00**

- 179 Health systems and urban areas / *Les systèmes de santé en milieu urbain*
- 180 The impact of health interventions and programmes on mortality / *L'influence des programmes et des interventions sanitaires sur la mortalité*

- 181 Evolving families and child wellbeing / *Recomposition des familles et bien-être des enfants*
- 182 Return migration: trends and consequences / *Migrations de retour : tendances et conséquences*
- 183 The economics of population ageing / *Aspects économiques du vieillissement démographique*
- 184 Gender and population / *Genre et population*
- 185 Demographic behaviour of colonial populations / *Comportements démographiques des populations coloniales*
- 186 Historical demography of East Asia from household registers / *Démographie historique de l'Asie orientale à partir des registres des ménages*
- 187 Language and population studies / *Pratiques linguistiques et recherches démographiques*
- 188 The demography of ethnicity, culture and language / *Ethnicité, culture et langue : aspects démographiques*
- 189 Will middle-income countries reach below-replacement fertility? / *Les pays à revenu intermédiaire atteindront-ils un taux de fécondité inférieur au seuil de remplacement ?*
- 190 Contraception, unintended pregnancy and induced abortion / *Contraception, grossesses non désirées et avortement provoqué*
- 191 Sideline demographic methods and data / *Méthodes et données décalées en démographie.*
- 192 Contrasting fertility patterns and explanations: East Asia compared with other low-fertility regions / *Modèles de fécondité contrastés : comparaison entre l'Asie orientale et d'autres régions à faible fécondité*
- 193 Spatial Patterns and Determinants of Demographic Outcomes / *Modèles et déterminants spatiaux des comportements démographiques*

**Thursday 29 August / Jeudi 29 août**

**15:30 - 17:00**

- 194 Using DHS data to describe scale and pattern of HIV epidemic / *L'utilisation des données des EDS pour décrire le niveau et le profil de l'épidémie de VIH*
- 195 The health transition and mortality decline: the impact of interventions and programmes / *Transition de santé et déclin de la mortalité : l'impact des interventions et des programmes*
- 196 Family living arrangements and children wellbeing / *Conditions de vie familiales et bien-être des enfants*
- 197 The children of migrants and their transition to adulthood / *Les enfants des migrants et leur transition vers l'âge adulte*
- 198 Economic situation of elderly / *La situation économique des personnes âgées*
- 199 Family and educational outcomes for youth / *Famille et réussite scolaire chez les jeunes*
- 200 EurAsian history of population and family / *Histoire de la population et de la famille en Eurasie*
- 201 Population and socioeconomic scenarios for climate change research / *Scénarios démographiques et socio-économiques dans la recherche sur le changement climatique*
- 202 Spatial demography / *Démographie spatiale*
- 203 Religion and ideology in demographic analysis / *Religion et idéologie dans l'analyse démographique*
- 204 Public policies and low fertility / *Politiques publiques et faible fécondité*
- 205 Unintended pregnancies and abortion / *Grossesses non désirées et avortement*

- 206 Methods for projecting fertility / *Méthodes de projection de la fécondité*
- 207 Roundtable: Revisiting demographic analyses and theories through the lens of Amartya Sen's capability approach / *Table ronde : Revisiter les analyses et les théories démographiques avec l'approche sur les capacités d'Amartya Sen*
- 208 Spatial approaches to estimation of demographic rates / *Approches spatiales de l'estimation des taux démographiques*

**Friday 30 August / Vendredi 30 août**

**8:30 - 10:00**

- 210 Assessing sex differences in childhood mortality / *Evaluer les différences de mortalité dans l'enfance selon le sexe*
- 211 Sexual behaviours and the spread of sexually transmitted infections, including HIV / *Comportements sexuels et diffusion des maladies sexuellement transmissibles, y compris le VIH*
- 212 Economics of the family / *L'économie de la famille*
- 213 The effects of migration and remittances on areas of origin / *Effets des migrations et des transferts de fonds sur les régions d'origine*
- 214 Spatial dimensions of population and development / *Les dimensions spatiales de la population et du développement*
- 215 Methods for projecting all-cause or cause-specific mortality / *Méthodes de projection de la mortalité, notamment par la prise en compte des causes de décès*
- 216 Adolescent pregnancy and fertility / *Grossesse et fécondité des adolescentes*
- 217 Learning outcomes: school and family factors / *La réussite scolaire : facteurs familiaux et scolaires*
- 218 Gender-Based Violence / *Violence à caractère sexiste*
- 219 Health and urban mortality experience before and throughout the health transition / *Santé et mortalité urbaine avant et pendant la transition sanitaire*
- 220 Public policies and low fertility - theoretical considerations / *Politiques publiques et faible fécondité - considérations théoriques*
- 221 Assessments of facility-based delivery services / *L'évaluation des services d'accouchement dans des établissements de santé*
- 222 Migration and health / *Migration et santé*
- 223 Biological determinants of health and measures / *Les déterminants biologiques de la santé et leur mesure*
- 224 Population dynamics and environmental linkages / *Dynamiques démographiques et environnement*

**Friday 30 August / Vendredi 30 août**

**10:30 - 12:00**

- 225 Month of birth, twins survival and neonatal mortality / *Mois de naissance, survie de jumeaux et mortalité néonatale*
- 226 Concurrency, sexual networks and HIV/AIDS / *Multiplcité des partenaires, réseaux sexuels et VIH/sida*
- 227 Family resources and family dynamics / *Ressources familiales et dynamique de la famille*

- 228 Destinations matter: variation in motives, strategies and outcomes by destination / *Motivations, stratégies et comportements migratoires selon la destination*
- 229 Economic development and population ageing / *Développement économique et vieillissement de la population*
- 230 Fertility related methods / *Méthodes de mesure de la fécondité*
- 231 Socioeconomic determinants of fertility and pregnancy among young woman / *Déterminants socioéconomiques de la fécondité et de la grossesse chez les jeunes femmes*
- 232 Trends in educational inequality / *Evolutions des inégalités scolaires*
- 233 Intimate partner violence / *Violence conjugale*
- 234 Sex imbalances and son preference / *Déséquilibres entre les sexes et préférence pour les garçons*
- 235 Recent fertility change: quantum and tempo effects / *Evolution récente de la fécondité : effets de calendrier et d'intensité*
- 236 Factors affecting contraceptive continuation and switching / *Facteurs affectant la continuation ou le changement de contraception*
- 237 Immigrant health / *La santé des immigrants*
- 238 Disentangling the spatial and social determinants of demographic behaviour / *Démêler les déterminants spatiaux et sociaux des comportements démographiques*
- 239 Environmental threats to child health / *Menaces environnementales pour la santé des enfants*

### **Friday 30 August / Vendredi 30 août**

**13:30 - 15:00**

- 248 Malnutrition in childhood : maternal, household and community determinants / *Malnutrition dans l'enfance : les déterminants relevant de la mère, du ménage et de la communauté*
- 249 Pathways to health: direct and indirect effects of early life conditions on later health / *Trajectoires de santé : effets directs et indirects des conditions de vie initiales sur la santé ultérieure*
- 250 Marriage migration, transnational couples and their families / *Migrations matrimoniales, couples et familles transnationales*
- 251 International migration: recent policy directions / *Migrations internationales : orientations politiques récentes*
- 252 Development assistance to achieve universal health care / *L'aide au développement pour assurer l'accès universel aux soins de santé*
- 253 Collecting ethnic and racial data in censuses and surveys / *Collecte de données ethniques et raciales dans les recensements et enquêtes*
- 254 Population and development in East Asia / *Population et développement en Asie orientale*
- 255 Human trafficking and forced migration / *Trafic d'êtres humains et migrations forcées*
- 256 Demographic training: challenges and new approaches / *Formation démographique : défis et nouvelles approches*
- 257 Migration and gender / *Migrations et genre*
- 258 Consequences of the timing of childbearing for fertility trends and gender equality / *Effets du calendrier reproductif sur les tendances de la fécondité et les rapports de genre*
- 259 Determinants of contraceptive use and method choice / *Les déterminants de l'utilisation et du choix méthode de contraception*

- 260 The growing number and size of cities: causes and consequences / *Croissance des villes en taille et en nombre : causes et conséquences*
- 261 Investing in people. Challenges for population policies in times of crisis. Organized by the European Association for Population Studies (EAPS) / *Investir dans les personnes. Défis pour les politiques de population en temps de crise - Organisé par l'Association européenne pour l'étude de la population (EAPS)*
- 262 Impacts of environmental and climate change on health and mortality / *Conséquences des changements climatiques et environnementaux sur la santé et la mortalité*

**Friday 30 August / Vendredi 30 août**

**15:30 - 17:00**

- 263 Right to health in developing countries / *Le droit à la santé dans les pays en développement*
- 264 Early life stress and later health / *Stress au début de la vie et santé ultérieure*
- 265 Internal migration and wellbeing / *Migration interne et bien-être*
- 266 The demographic dynamics of refugee populations: policies and programmes / *Dynamique démographique des populations réfugiées : politiques et programmes*
- 267 Belonging and control in population history / *L'appartenance et le contrôle des populations dans l'histoire*
- 268 Methods for assessing cause and effect in population sciences / *Méthodes pour évaluer les rapports de causalité dans les sciences de la population*
- 269 Ageing in Asia, societal and family support / *Vieillir en Asie : soutiens sociétal et familial*
- 270 Urbanisation, economic development and family transformation through history / *Urbanisation, développement économique et transformations familiales : une perspective historique*
- 271 Education and social mobility / *Education et mobilité sociale*
- 272 Gender, work and family (2) / *Genre, travail et famille (2)*
- 273 Recent fertility change: quantum and tempo effects. Further perspectives / *Evolution récente de la fécondité : effets de calendrier et d'intensité. Nouvelles perspectives*
- 274 Unmet need for family planning / *Les besoins non satisfaits en planification familiale*
- 275 Living arrangements and family support of older people / *Conditions de résidence et soutien familial aux personnes âgées*
- 276 Fertility and reproductive health: examining links with the environment / *Fécondité et santé de la reproduction : examiner les liens avec l'environnement*
- 277 Risk mapping / *La cartographie des risques*

**Saturday 31 August / Samedi 31 août**

**8:30 - 10:00**

- 279 Early life socioeconomic adversity and later health / *Difficultés socio-économiques en début de vie et santé ultérieure*
- 280 Analysing causes of death to understand trends and differentials / *L'analyse des causes de décès pour comprendre les tendances et les différentiels de mortalité*
- 281 Migration policies and trends / *Tendances et politiques migratoires*
- 282 The sustainability of mega-cities / *La viabilité des mégapoles*

- 283 New regional estimates of fertility in China and India / *Nouvelles estimations régionales de la fécondité en Chine et en Inde*
- 284 Population and the environment / *Population et environnement*
- 285 Harmful traditional practices: female genital mutilation and other practices / *Pratiques traditionnelles néfastes : mutilations sexuelles féminines et autres*
- 286 Population and human rights / *Population et droits de l'homme*
- 287 Gender, work and family (1) / *Genre, travail et famille (1)*
- 288 Childlessness: measurement, determinants, and trends / *Une vie sans enfant : mesure, déterminants, et tendances*
- 289 Youth SRH services needs and challenges / *Les besoins et les défis des services de santé sexuelle et reproductive destinés aux jeunes*
- 290 Work-family and work-life issues / *Concilier travail, vie familiale et vie personnelle*
- 291 Population-Environment dynamics in Latin America / *La dynamique population-environnement en Amérique latine*
- 292 Indirect estimation of age: applications in paleo-, medieval and contemporary demography / *Estimations indirectes de l'âge : applications en paléodémographie, en démographie historique et contemporaine*

## **Saturday 31 August / Samedi 31 août**

**10:30 - 12:00**

- 293 The consequences of an ageing workforce / *Les conséquences du vieillissement de la population active*
- 294 New approaches to the collection and analysis of data on mortality and cause-of-death / *Nouvelles approches pour la collecte et l'analyse des données sur la mortalité et les causes de décès*
- 295 International migration and family dynamics / *Migrations internationales et dynamiques familiales*
- 296 Population and policy challenges in East Asia / *Défis démographiques et politiques en Asie orientale*
- 298 Diverse realities: Understanding the educational trajectories of young people / *Comprendre les trajectoires scolaires des jeunes : des réalités diverses*
- 299 Demographic transition in Asia / *La transition démographique en Asie*
- 300 Biodemography / *Biodémographie*
- 301 Living arrangement and its effect on older people in ageing societies / *Les conditions de vie des personnes âgées dans les sociétés vieillissantes*
- 302 Social networks and demographic outcomes / *Réseaux sociaux et comportements démographiques*
- 303 Family dynamics and fertility: the role of men / *Dynamiques familiales et fécondité : le rôle des hommes*
- 304 Family planning programmes and the reduction of fertility: lessons learned / *Programmes de planification familiale et réduction de la fécondité : quels enseignements ?*
- 305 Intergenerational transmission of demographic behaviour / *Transmission intergénérationnelle des comportements démographiques*

- 306 Migration as a mode of adaptation to extreme climate events, natural disasters and environmental change / *La migration comme mode d'adaptation à des conditions climatiques extrêmes, des catastrophes et des changements environnementaux*
- 307 Revisiting the fertility transition: long term perspectives / *Réexaminer la transition de la fécondité : des perspectives à long terme*

# Abstracts / Résumés

## **002. Trends in HIV prevalence and incidence sex ratios in ALPHA demographic surveillance sites, 1990-2010**

*Basia Zaba, Clara Calvert, Milly Marston, London School of Health and Tropical Medicine; Raphael Isingo, National Institute for Medical Research, Tanzania; Jessica Nakiyingi-Miuro, MRC/UVRI Uganda Research Unit On AIDS; Tom Lutalo, Rakai Health Sciences Program; Amelia C Crampin, London School of Hygiene and Tropical Medicine (LSHTM); Constance Nyamukapa, Biomedical Research & Training Institute & Imperial College London; Jim Todd, MRC/UVRI Uganda Research Unit On AIDS; Georges Reniers, London School of Hygiene and Tropical Medicine (LSHTM)*

Antiretroviral Therapy (ART) has two well-described beneficial effects. First, it drastically prolongs the life expectancy of those receiving treatment, and second, it reduces HIV transmission to uninfected partners. The expansion of ART programs is thus expected to elevate HIV prevalence rates and reduce HIV incidence at the same time. These expectations are largely confirmed in a pooled dataset of five African demographic surveillance sites with HIV status information. Further, we find that the F/M sex ratio of prevalent infections increases over time and that suggests that ART coverage is better among women than men. This is corroborated by an increasing F/M sex ratio of incidence, suggesting that although the pool of HIV infected women is increased, less are infectious compared to the pool of HIV positive men. Our results thus indicate that higher ART coverage rates benefit HIV positive women (more than men) in term of increased survival, but benefit HIV negative men (more than women) because of a greater reduction in new infections.

## **002. Availability of HAART and Risky Sexual Behaviour: Insights from Botswana**

*Wayne S Gill, University of Free State, South Africa; Zitha Mokomane, Human Sciences Research Council of South Africa; Mona Drage, The Norwegian Heart and Lung Patient Organisation Organisation*

Against the background of high HIV infection rates and AIDS-related death in the 1990s, the government of Botswana declared HIV and AIDS a national emergency and committed an aggressive and comprehensive multi-sectoral and multi-level response to fight the epidemic and mitigate its socio-economic impact. One venue of the response has been the provision of free HAART to all eligible citizens through the National ARV Therapy Programme. Introduced in 2002, the programme is now available countrywide, with over 90% of people in need of it accessing it free of charge. This success has, however, been accompanied by many anecdotal accounts of an increase in the prevalence of risky sexual behaviour. Using a combination of quantitative and qualitative data, this paper assesses the perceived association between the availability of HAART and high-risk sexual behaviour in the country. The results show suggest that contrary to the anecdotal accounts people continue practising, and even adopting, safe sex and health-seeking behaviours such as consistent condom use, having one sexual partner, and uptake of voluntary HIV testing. Among other things, the study concludes that increased contact with health systems to receive HAART may actually encourage positive changes in risky sexual behaviours.

## **002. Immediate lifelong highly active antiretroviral therapy for all pregnant women with HIV: The counselling conundrum**

*Laura Ferguson, University of Southern California; Karina Kielmann, Queen Margaret University; Alison D. Grant, London School of Hygiene & Tropical Medicine; Deborah Watson-Jones, London School of Hygiene & Tropical Medicine; Sophie Vusha, University of Nairobi;*

*John Odero Ong'ech, University of Nairobi; David A Ross, London School of Hygiene & Tropical Medicine*

Many countries are contemplating introducing immediate lifelong highly active antiretroviral therapy (HAART) for all women diagnosed with HIV during pregnancy ("Option B+"). A prospective cohort study was carried out comprising 100 women attending Naivasha Hospital, Kenya, who had been diagnosed with HIV during their current pregnancy. Attrition along the pathway to HAART, and associations with registration at an HIV clinic were assessed. 19 of these women and eight of their health service providers were interviewed to better understand women's experiences and care-seeking behaviours. 30 HIV testing sessions were observed.

The uptake of services along the pathway to HAART was low. Women who felt that they had enough information to decide whether or not to be tested for HIV were 3.6 times more likely to register at an HIV clinic within three months than women who did not feel sufficiently informed in this regard. Most women were unprepared for the test itself and for a positive test result, and described needing time to accept their HIV diagnosis.

To maximize the potential benefits of Option B+, linkage into HAART services following an HIV diagnosis in pregnancy-related services must be improved. A range of innovative approaches to counselling should be introduced and rigorously tested.

### **002. Family situation and living arrangement of HIV-infected adolescents in Thailand**

*Sophie Le Coeur, Institut National d'Études Démographiques (INED); Eva Lelievre, Institut National d'Études Démographiques (INED)*

Public health policies in Thailand have now addressed the problem of mother-to-child HIV transmission. However, a large number of children who were born with HIV infection are now reaching adolescence, a critical period when their survival is at risk. The 'Teenagers Living with Antiretrovirals' TEEWA survey, undertaken by PHPT-INED interviewed 662 adolescents from 12 to 19 years old who were born with HIV across Thailand. The adolescents were asked about their daily lives and the survey also interviewed their parents or caregivers about their life histories. These children are entering adolescence, often after a traumatic childhood: a family history disrupted by the illness and the subsequent death of one or both parents; a difficult relationship with the grandparents who appear to often be their carers; periods of serious illness; and above all the discovery that they are infected with HIV. In this presentation we will give a first overview of their family situation and living arrangements in order to assess the social and health challenges faced by these teenagers.

### **003. Childlessness in Brazil: socioeconomic and regional diversity**

*Suzana M Cavenaghi, National School of Statistical Science at The Brazilian Institution of Geography and Statistics - ENCE/IBGE; Jose Eustaquio Diniz Alves, Brazilian Bureau of the Census*

Until recently to talk about childlessness in Brazil would not find sound research grounds. Since 2005 the country has reached fertility replacement level and the newest estimates indicate that fertility continues its decline path, from 1.9 in 2010 and falling to 1.7 in 2011. Fertility schedule is diverse when compared to countries because childbearing starts early and stops also early in women's life. In such low fertility regimes it would be expected that a high percentage of women retreat from childbearing as in several European countries. However, in average in 2010, 13% of women aged 40-49, that is, women born between 1961 and 1970, at the beginning of fertility transition, did not have any children, a figure much lower than most European countries. On the other hand, given the high inequality present in almost all socioeconomic indicators, childlessness is very different for well educated and low-educated women, for wealthier and poor. The objective of this paper is to analyze the tendencies on childlessness in Brazil looking at the socioeconomic and regional differences in order to advance some hypothesis to the future level of

fertility in Brazil. The question we try to answer is whether Brazil will become a childless society or only some segments of the population will be under such regime.

### **003. Is fertility at replacement level in Ouagadougou, Burkina Faso? Assessing the impact of migrations**

*Laurent Toulemon, Institut National d'Études Démographiques (INED); Clémentine Rossier, Institut National d'Études Démographiques (INED); Bassiahi Abdramane Soura, Université de Ouagadougou*

Fertility remains high in Burkina Faso as a whole, but the fertility transition is well advanced in the capital city, Ouagadougou. Formal neighbourhoods, in the centre of the city, are surrounded by informal areas devoid of public services. Migrants from the countryside, less educated women, and poor families more often live in informal areas. A Health and Demographic Surveillance System (HDSS) has been settled in 2008 at the periphery of the city. The city appears to be very heterogeneous in terms of fertility: the total fertility rate (TFR) is 1.8 children per woman in the formal areas followed, as against 3.5 in informal areas. Composition effects and differences in fertility preferences and unmet needs for family planning are not sufficient to explain this large gap, which may be due, at least partially, to an artefact. Migration to the city and, even more, migration from formal areas to informal areas, seem to be highly related to fertility behaviour, so that TFRs may be biased by selective migrations. Our aim in this paper is to model jointly migrations and fertility in order to check whether selective migrations could explain these differences (and especially the low fertility level in the formal areas).

### **003. Middle Class Dreams: India's One-Child Families**

*Alaka Basu, Cornell University; Sonalde Desai, University of Maryland & National Council of Applied Economic Research, New Delhi*

While rapid fertility decline in India in the last two decades has received considerable attention, much of the discourse has focused on a decline in high parity births. However, this paper finds that, almost hidden from the public gaze, a small segment of the Indian population has begun the transition to extremely low fertility. Among the urban middle classes, it is no longer unusual to find families stopping at one child, even when this child is a girl. Using data from the India Human Development Survey of 2004-2005, this paper examines the factors that may lead some families to stop at a single child. Better understanding of the correlates of this small but distinct segment of society also provides a window into the role of demographic behaviour in shaping the future of social inequality in a society undergoing rapid transition.

### **003. Below-replacement fertility of ethnic Indians in Fiji: a decomposition analysis of the components of changes in TFR**

*Bhakta B. Gubhaju, Australian National University; Eduard Jongstra, United Nations Population Fund (UNFPA); Merewalesi Raikoti, Bureau of Statistics, Suva, Fiji*

The population of Fiji consists of two major ethnic groups, Fijians and Indians. It also comprises other group, such as Europeans, Chinese and other Pacific Islanders. The 2007 census showed that there were 56.8 percent Fijians and 37.5 percent Indians, with the remaining 5.7 percent consisting of other groups. Fiji has recently witnessed a spectacular decline in fertility but with a marked variation between Fijians and Indians. The total fertility rate among Indians dropped to 2.8 in 1986 and 2.5 in 1996. It continued to decline further, approaching below the replacement fertility of 1.9 in 2007. By contrast, Fijian fertility reached 3.9 in 1996. As with Indians, Fijian fertility also fell sharply to 3.2 in 2007. The main objective of this paper is to examine ethnic variation in fertility using current fertility estimated directly from the census data. As the Fiji census continued to gather information on the relationship of mothers with their own children, this information has been used to estimate fertility trends over the past 15 years preceding the census by the application

of the own-children method. This paper will first examine fertility trends and differentials by ethnicity, Fijians and Indians. It will undertake decomposition analysis technique to determine the components of changes in the TFR.

#### **004. Arranged and forced marriages in Kyrgyzstan: Persistence or change?**

*Lesia Nedoluzhko, Stockholm University; Victor Agadjanian, Arizona State University*

In this study we analyze transitions to first marriage in Kyrgyzstan – one of the post-Soviet states of Central Asia. We use retrospective survey data collected in 2011/12 that contains full partnership histories of men and women in that country. We estimate hazard regression models to examine competing risks of arranged and non-arranged marriage among Kyrgyz and Uzbeks - Kyrgyzstan's two largest ethnicities. For Kyrgyz we also analyze risks of forced marriage (i.e., marriage resulting from non-consensual bride kidnapping) in contrast to consensual marriage. The study is aimed to answer two main questions: whether the incidence of arranged and forced marriage changes over time and whether the type of marriage is selective with regard to socio-demographic characteristics of bride and/or groom. It will contribute to the scarce research on nuptial behavior in Central Asia.

#### **004. Changing perceptions towards marriage and singlehood among Thai women**

*Pacharawalai - Wongboonsin, College of Population Studies, Chulalongkorn University; Pataporn Sukontamarn, College of Population Studies, Chulalongkorn University; Wiraporn Toom Pothisiri, College of Population Studies; Rungratana Kowantanakul, College of Population Studies, Chulalongkorn University*

As for most other countries in Asia, Thailand had been characterized by universal marriage since the 1960s. However, the country has witnessed increasing trends towards later and less marriage, where singlehood is particularly high for well-educated women. This paper aims to explore Thai women's perceptions and attitudes on marriage and singlehood, particularly those among the never-married women. Through a sequential mixed-method approach, the study first quantitatively examines the contemporary context of marriage and singlehood, the perceptions of Thai women towards singlehood, gender equality and childbearing, and the factors influencing these perceptions. This is followed by a qualitative study to explore the attitudes and perceptions of the never-married women towards singlehood as well as their lifestyle, life satisfaction, and preparation for old age. An in-depth interview is conducted for the never-married women aged 30 – 44 who completed college and currently reside in Bangkok. The qualitative data collection is ongoing and scheduled to be completed by October 2012.

#### **004. Marriage, its process and preparedness among Youth: Insight from Youth in India**

*Shubhranshu Upadhyay, International Institute for Population Sciences (IIPS); Pallavi Gupta, International Institute for Population Sciences (IIPS)*

It is evident that rapid global changes including urbanization, migration, increasing educational opportunities and technological advancement have impact on the institution of marriage all over the world and India is not segregated from these changes. However, traditional values and norms are still playing significantly in marriage process, such as age at marriage, process of mate selection, dowry, status of bride in family etc. Youth in India study, a sub nationally representative survey, help us to explore this dimension minutely. Results reveal that arrange marriage prevails irrespective of states, however some independence in the choice of groom or bride is observed in Tamil Nadu. Largely youth in northern states are not aware about their would-be spouse before marriage, which is not the case for southern states. Men are excited about marriage while for female; marriage is a reason to worry. The chances of knowing spouse before marriage is significantly more, if the age at marriage is above the legal age. Better economic condition and mother's education, education of married women appeared as significant and

positive determinants on this. Men and women living in non nuclear family and in rural areas are less likely to interact with their spouse before marriage.

#### **004. Transition into marriage in Greater Jakarta: Courtship, Parental Influence and Self-Choice Marriage**

*Ariane Utomo, Australian National University; Iwu Dwisetyani Utomo, Australian National University; Peter Francis McDonald, Australian National University; Anna Reimondos, The Australian National University; Terence H Hull, Australian National University*

This paper questions whether the shift to self-choice marriage implies that the traditional cultural norms stressing family influence on spouse selection have been weakened by inroads of modern norms of greater individual autonomy in the marriage process. Using a representative sample of married young adults (aged 20-34) in Greater Jakarta, we explore the courtship processes, and the degree of parental role in spouse selection. While only 4 per cent of the respondents cited that their marriage was arranged by others; over half of the respondents reported their parents or in-laws played a major role in their marriage decision. Our multivariate analysis suggests that the tertiary educated respondents are those most likely to report their parents playing a major role. We reflect on the prevailing cultural norms to discuss the centrality of family in studying the interactions between marriage, education, and social mobility in modern Indonesia.

#### **005. Changing aspirations for voluntary mobility and immobility in times of crisis**

*Dominique Jolivet, International Migration Institute, University of Oxford*

According to Carling's "aspiration-ability" model, the distinction between aspirations and abilities allows us to differentiate between two categories of non-migrants: people aspiring to migrate but lacking the required abilities ("involuntary non-migrants"), and people not aspiring to migrate ("voluntary non-migrants"). Discourses, perceptions, and migratory and geographical imaginations might have an impact on aspirations. We ask whether the economic crisis in Europe and its consequences on the conditions of migrants might change the aspirations of non-migrants. In times of crisis, involuntary non-migrants might become voluntary ones, considering immobility as a better alternative to migrating to Europe with uncertain working and living conditions. The EUMAGINE project investigates the impact of perceptions of human rights and democracy on the migration aspirations and decisions of 18–39-year-olds in Turkey, Morocco, Senegal and the Ukraine. The survey and in-depth interviews included questions on perceptions of life in Europe, international migration aspirations and discourses. This paper will present results of the data gathered in 4 research areas in Morocco: the Togdha Valley, the Central Plateau, Tangier and the Eastern High Atlas. More specifically, it will explore changing aspirations among non-migrants in these areas.

#### **005. Irregular Migration: assessing migration of young adults from southern Ethiopia to South Africa**

*Teshome Desta Kanko, Wolaita Sodo University*

The study investigates the socioeconomic and demographic causes and consequences of irregular migration of youth from southern Ethiopia to South Africa. The sample includes 658 eligible young adults aged 15 to 54. A quantitative cross-sectional survey was carried out on Feb. 2010. Data are gathered from four randomly selected local districts & then households from two zones in southern Ethiopia using questionnaire, interviews and discussions. It is found that the irregular migration is dominated by young single male aged 20 to 34. The majority of the smuggled migrants are first or second born children. Age, residence and employment status have a significant negative association with migration while sex, marital status, education, duration of residence and birth order have a significant negative association. Over 44% of the respondents view the main cause for the irregular migration to be perceived better opportunities in South Africa

and only 8% of them claimed poverty. The migration is facilitated by a network of smugglers in Addis Ababa, Hossana or other towns in Ethiopia and they work in cooperation with several smugglers from Kenya and Somalia. Return migrants are better off now than before migration. Many of the smuggled migrants faced harsh & unexpected negative consequences.

### **005. Migration Aspirations among Young People in Egypt: Who Desires to Migrate and Why?**

*Asmaa Elbadawy, Population Council*

International migration has been a vital aspect of labor markets in the Middle East and North Africa (MENA), particularly Egypt. Egypt is among the largest ten remittance-receiving countries in the world (Wahba 2007). The primary objective of this paper is to examine the determinants of migration intentions among youth in Egypt. Studying factors shaping development of migration intentions is important to understanding the migration decision process and predicting future migration flows. I use a recently fielded survey on adolescents and youth: the 2009 Survey of Young People in Egypt (SYPE). Based on SYPE, one in three young men in the age group 15-29 expressed willingness/intention to migrate. I found that having a migrant on one's social network is one of the key factors in developing migration aspirations. The wealthiest youth are more likely to want to migrate to the West. Worrying about future prospects generally is a push-factor.

### **005. The influence of vulnerability on migration intentions in Afghanistan**

*Craig Loschmann, Maastricht University; Melissa Siegel, Maastricht University, School of Governance*

This study explores the influence of vulnerability on migration intentions within the context of Afghanistan. While it is commonplace to conceptualize migration as being driven by certain economic-related factors, in a fragile setting like Afghanistan the difference between voluntary and involuntary movement is not easily distinguishable, making it necessary to approach the subject through a spectrum which does not presuppose migration is strictly economic in nature. With this in mind, we consider the issue through the broader lens of household vulnerability, a measure which incorporates a range of socio-economic factors allowing for a more comprehensive analysis. We first construct a profile of household vulnerability through individual indicators of deprivation along four principle dimensions, and then perform a regression analysis estimating the influence on migration intentions. Our results provide evidence that vulnerable households have a lower likelihood of concrete plans to migrate. This result supports the suggestion that it is not the "poorest of the poor", or in our case the "most vulnerable of the vulnerable" who aspire to move, indicating households have a realistic understanding of their possibilities taking into consideration the inherent costs and risks associated with cross-border movement.

### **006. Domestic Migration to Higher Education Institutions: Analysis of the Student Record Data in the UK**

*Neil G Bailey, University of Southampton*

Around two and half million people were attending an institute of higher education in the UK in the 2010/2011 academic year which equates to around 4.1% of the total population. On a global scale, the number of mobile students has grown by almost 350% since 1975, with the UK being the second most popular destination behind the USA. Surprisingly, given the importance of higher education very little work has been conducted on the migratory patterns of students attending institutes of higher education in the UK. With the use of the Higher Educational Statistics Agency – Student Record Dataset, which contains detailed information on every student recorded as attending an institute of higher education in the UK, this paper provides an in-depth analysis of the migratory patterns of those attending an institute of higher education in the UK during the 2010/11 academic year with a focus on the county level geography. From the data I find that around a

quarter of all students did not migrate to a different county and attended an institution in the same county as their domicile, while around 40% of students migrated to a different county. Also, when comparing the migration of students compared to all migration; distance was less important to those attending an institute of higher education.

**006. Internal Migration to Kinshasa 1970-2007: Investigating migrant characteristics in times of insecurity and economic crises**

*Jamaica Corker, University of Pennsylvania*

It is not clear how economic crises or conflict influence the process of internal migration and urbanization. This paper uses data from the Migration between Africa and Europe-Congo (MAFE-Congo) dataset to investigate internal migration trends in the Democratic Republic of Congo (DRC) by examining the migration histories of 389 lifetime migrants to Kinshasa. The analysis considers whether recent decades of civil conflict and economic crises in the DRC coincided with higher levels of in-migration to Kinshasa. Evidence of increases in migration to Kinshasa during heightened periods of conflict was not found, when cohort and age patterns of migration are accounted for. Additionally, the overwhelming majority of migrants to Kinshasa were born in cities, not in rural areas as might be expected given DRC's high rates of rural-to-urban migration, and most migrants were born in the provinces adjacent to Kinshasa. This implies that patterns of migration to Kinshasa reflect geographic proximity and urban-to-urban migration patterns more than direct efforts to flee conflict, and suggests that the end of the conflict in the DRC may not lead to decreases in migration to Kinshasa.

**006. Migration, Loss-To-Follow-Up and Population Surveillance in South Africa**

*Michael White, Brown University; Mark A Collinson, University of the Witwatersrand; Samuel Kojo Kojo Antobam, University of the Witwatersrand*

In this paper we analyze migration in one well-known long-running surveillance program, the Agincourt HDSS in South Africa. Migration is a key demographic event for populations monitored with surveillance systems, yet we argue that it is underappreciated in current HDSS practice. We provide (1) analysis of secondary data predicting migration, and hence LTFU; and (2) results from a randomized study of migrant contact and follow-up, testing the efficacy of in-person versus face-to-face interviews in the South African setting. Our results are designed to help researchers and administrators connected to HDSS understand migration dynamics and its potential impact on population and health studies.

**006. The effect of social mobility on the odds and destination of relocation: moving within or out of the Brussels-Capital Region**

*Lena Imeraj, Vrije Universiteit Brussel; sylvie gadeyne, Vrije Universiteit Brussel; Didier Willaert, Vrije Universiteit Brussel*

Despite being the wealthiest region of Belgium, the Brussels-Capital Region (BCR) is marked by widening social inequalities, resulting in a distinct pattern of socioeconomic segregation. This spatial division is reinforced through both selective migration and the process of class reproduction. It has been illustrated thoroughly that both processes are strongly determined by one's educational attainment. This study reveals how educational attainment and the subsequent (lack of) opportunities for social upward mobility have an effect on people's residential mobility and thus on the composition of the neighbourhood population. Analyses are drawn on the exhaustive and anonymous data from the Belgian censuses of 1991 and 2001, individually linked to the National Population Register (situation in 2006) to observe subsequent internal migration. First, binary logistic regression illustrates how upward social mobility to the highest educational levels enhances the probability of moving, while the inverse social mobility has a rather opposite

effect. Second, the possible effect of social mobility on the direction of the observed relocation is elucidated through multinomial logistic regression.

### **007. Marriage Squeeze and Intergenerational Transfers in Contemporary Rural China: Evidence from Yi County of Anhui Province**

*Xiaoyi Jin, Xi'an Jiaotong University; qiuju guo, School of Public Policy and Administration, Xi'an Jiaotong University; Marcus W Feldman, Stanford University*

Using data from a survey of four towns in Yi County of Anhui Province taken in 2008, this paper analyzes the effects of sons' marital status on intergenerational transfers, including financial transfers, instrument transfers, and emotional transfers provided to parents, as well as co-residence arrangements. Random-effect regression analysis showed that son's marital status has strong effects on financial transfers to and co-residence with parents. Compared with married sons who received more marriage help with marriage costs from their parents, older unmarried sons (so-called forced bachelors) transfer less finance to their parents, and are more likely to live with their parents. Parents' intergenerational transfers to sons, as well as the parents' own needs and sons' capability all affect the intergenerational transfers from sons. In addition, whether they co-reside with parents also influences parents' financial transfers from their sons. These results show that both theories of exchange and altruism are simultaneously relevant in the context of the marriage squeeze of contemporary rural China.

### **007. Intergenerational contact in transnational families in Belgium**

*Tom De Winter, Vrije Universiteit Brussel; Suzana Koelet, Free University of Brussels; Ronan Van Rossem, Universiteit Gent; Helga De Valk, NIDI/Vrije Universiteit Brussel*

This paper focuses on transnational family relations among European migrants in Belgium. European migrants represent a large and growing share of immigrants in Belgium and the EU. Although they have been at the hearth of EU mobility policies for many years now, little is known on European migrant families and the impact of this mobility and transnationality on these families. The current paper focuses on the intergenerational contact between individual migrants and their parents. The central first question will be how and to what extent European transnational adult migrants maintain contact with their parents. Second we compare to what extent this contact differs in European transnational families (n=935) compared to both Belgian (n=5473) and non-European (n=755) transnational families. Third we explain main determinants for intergenerational contact of European migrants building on insights of family sociology and migration studies. We use the first wave of the Belgian Generations and Gender Survey. The data include information on contact of individual migrants with their parents and a wide range of individual and family background characteristics that will be used for explaining transnational contact among European families in the multivariate analyses of the study.

### **007. Transfers from Old Parents to Single Adult Children in Korea**

*Yun-Suk Lee, University of Seoul*

Using the first wave of the Korean Longitudinal Study of Ageing, (KLoSA), a nationwide representative study of middle/old-aged population in 2006, we examines (1) how the young adults and their parents exchange economic resources in Korean and (2) whether the above two theories explain economic exchange behaviors. Our sample consists of 1,067 parents who have 1,392 single children who finish formal education, live independently and from 19 to 39 years old. We find that 12.6% of the parents provide an average of 4,593,000 won (= \$4,130) to young adult children during the last year. And we find that 35.2% of young adult children provide an average of 1,674,000 won (= \$1,505) to parents. Contrary to the dominance of downward transfers in developed countries between young adult children and their old parents, many children help old parents economically in Korea. Tobit models of downward and upward transfers indicate that

parents with more economic resources and home ownership and children with higher education levels and out of work are more likely to participate in downward transfers and that parents in economic need and with health problems and children who are older and earn money are more likely to participate in upward transfers.

**007. The economic effects of public and private transfers on elderly households in India: Implications for social welfare policies**

*Soumitra Ghosh, Tata Institute of Social Sciences*

There has not been any study in India to understand the relationship between public and private inter-household transfers and the impact of such transfers on the living standards of the older households. Part of the problem is the lack of adequate data; data sets containing both private transfer and public transfer are scarce. Therefore, the key contributions of this paper would be to take into account endogeneity of income and resource flows into the household; investigate the relationship between public and private transfers and assess the economic effects of transfers on the households. The study uses data from the survey titled 'Study on Global Ageing and Adult Health (SAGE)' carried out by WHO and International Institute for Population Sciences (IIPS) in 2007 in six states of India namely Assam, West Bengal, Uttar Pradesh, Rajasthan, Maharashtra and Karnataka. The sample consists of 12, 198 households with at least one person aged 50 years and above. An appropriate econometric technique would be adopted to address the endogeneity of public transfer and income when estimating the determinants of private transfer. For the estimation of the incidence of poverty, household equivalent income that reflects total income and the number of children and adults in the household would be calculated by using OECD scale.

**008. Labor and consumption across the lifecycle**

*Andrew Mason, University of Hawaii At Manoa; Ronald D. Lee, University of California, Berkeley*

We propose new measures to summarize and compare age profiles of consumption and labor income. One measure is the lifetime support ratio or the ratio of effective lifetime labor to effective lifetime consumption. Two other measures quantify the timing of work and consumption over the lifecycle. Using a highly stylized model we show how changes in these features of the lifecycle influence the standard of living that can be achieved. To illustrate the value of these measures we consider two practical applications. In the first we analyze the effect of increasing life expectancy on lifetime effective labor and consumption. We show that longer life is leading to greater lifetime consumption but little response in lifetime labor supply. The exception to this generalization is in low income, high mortality countries where the gains in life expectancy are occurring at the working ages as well as the non-working ages. In the second application we consider whether the lifetime support ratio and the timing of consumption relative to labor income are influenced most by variation in life cycle patterns of work or lifecycle patterns of consumption. The answer depends on the level of development. In lower income countries only labor income appears to matter while in other countries both consumption and labor income are important.

**008. Youth unemployment and age structure across the OECD countries**

*Fortino Vela-Peon, Universidad Autonoma Metropolitana Xochimilco; Alejandro Aguirre Martinez, El Colegio De Mexico*

In many countries of the world, youths suffer high rates of unemployment. Statistics published by the OECD (for the second quarter of 2012), show unemployment rates, among people aged 15 to 24 (17.1%), a little more than double of the unemployment rates for the general population (7.9%). Although youth unemployment has remained high during the last decade, their values continue to be a source of constant concern.

One of the arguments offered to explain the high youth unemployment, points out that this is affected by population dynamics, as proposed by the Easterlin's hypothesis.

Using a panel data model, the objective of this paper is to explore the influence of changes in the age structure, on the youth unemployment rate. Our analysis comprises the 33 OECD country members, from 2000 to 2011. Preliminary results suggest the presence of a crowding out effect among male youngsters 20-24.

#### **008. Income Shocks, Contraceptive Use, and Timing of Fertility**

*Shamma Adeeb Alam, University of Washington; Claus C Portner, Seattle University*

This paper examines the relationship between household income shocks and fertility decisions. Using panel data from Tanzania, we estimate the impact of agricultural shocks on contraception use, pregnancy, and the likelihood of childbirth. To account for unobservable household characteristics that potentially affect both shocks and fertility decisions we employ a fixed effects model. Households significantly increase their contraception use in response to income shocks from crop loss. This comes from an increased use of both traditional contraceptive methods and modern contraceptives. The poorer the household the stronger the effect of income shock on contraceptive use is. Furthermore, pregnancies and childbirth are significantly delayed for households experiencing a crop shock. For both pregnancy and childbirth the likelihood of delay as a result of shocks increases the poorer the household. We argue that these changes in behavior are the result of deliberate decisions of the households rather than income shocks' effects on other factors that influence fertility, such as women's health status, the absence or migration of spouse, and dissolution of partnerships.

#### **008. Heat Waves at Conception and Later Life Outcomes**

*Joshua Wilde, University of South Florida; Benedicte Helene Apouey, Paris School of Economics*

This paper asks whether children conceived during heat waves have better health and educational outcomes later in life. Using Census data from 16 countries, we show that children conceived during heat waves have higher literacy rates, attain more years of schooling, and have lower rates of disability than children conceived during periods of normal temperatures. We also show, using a combined AIS, DHS, and MIS data set from Africa, that infant mortality is lower for children conceived during heat waves. We then explore several channels through which this effect may occur, including differential reductions in sexual activity during heat waves among higher quality parents; biological effects of heat on conception and spontaneous abortion in utero; and changes in the proportion of unintended pregnancies during heat waves, among others.

#### **009. Effectiveness of using comic books to communicate HIV and AIDS messages to in-school youth: Insights from a pilot intervention study in Nairobi, Kenya**

*Francis Obare, Population Council; Harriet Birungi, Population Council*

The effectiveness of school-based sexual and reproductive health education may be limited by the socio-cultural and policy environment, the technical capacity of teachers to conduct such education, as well as technological advancements that may render traditional teaching approaches unappealing to many young people. This paper uses data from a pilot pre- and post-intervention study that was conducted in eight secondary schools in Nairobi, Kenya, between 2010 and 2011 to examine the effectiveness of using comic books to deliver HIV and AIDS messages to in-school young people. Information was collected through structured self-administered interviews with 3624 and 2914 students at baseline and endline respectively. Qualitative feedback from students was also obtained through drop-boxes. The findings show that the comic books were effective in improving students' knowledge about modes of HIV infection; enhancing communication about the epidemic among them; positively changing their attitudes towards people living with HIV; reducing their fear and increasing their likelihood and intention of getting tested for HIV; and

positively changing their sexual behaviours. The study underscores the need for age-appropriate communications channels to reach young people with HIV and AIDS information in settings that are affected by the epidemic.

### **009. Improving Maternal Health through Sexual and Reproductive Health Rights Awareness and Life Skill based Training: Experience in Bangladesh**

*Farhana Rahman, UCEP-Bangladesh; Ubaidur Rob, Population Council; Aftab Uddin Ahmed, UCEP-Bangladesh*

Background: Studies conducted in Bangladesh reported a high maternal mortality ratio for the past decades. Approximately 80 percent girls become mother before they reached age 18. Lack of knowledge on SRHR among adolescents and lack of skills for empowerment are two major factors responsible for this low performance in maternal health sector. Objectives: To improve reproductive and maternal health of UCEP students by providing SRHR education and life skill based training to delay marriage and subsequent childbearing. Intervention area: Providing SRHR education to 4 UCEP school students. Organized FGDs to assess the need of SRHR education in the save intervention area. Intervention process: The study conducted by using SRHR manual for the students with a pre and post test survey. The Findings suggest that knowledge and attitude of adolescent have changed significantly and those who received the education are more knowledgeable on safe motherhood compared to those who have not. Both vicariate and multivariate analyses identified several key factors which have influenced their behavior. Conclusion: Considering the importance of SRHR education for adolescent, UCEP-Bangladesh engaged their students in SRHR education and life skill vocational trainings to reduce early marriage and economic dependency.

### **009. Questioning gender norms to promote SRH among early adolescents: Evidences from a school program in Mumbai, India**

*Pranita Achyut, Icrw; Ravi Verma, icrw*

Concepts of sexuality and health find their roots in the notions of gender, thinking on masculinity and femininity, attitude towards the opposite sex, and validation of the use of violence – all of which set-in early through various socialization processes. This paper presents findings from an operations research Gender Equity Movement in Schools (GEMS). It was conducted in 45 schools with adolescent aged 12-14 years and reached to over 8000. Using gender transformative approach, the intervention included group education activities (GEA) and campaign, which were developed based on a formative research. A total of 909 students participated in baseline and 2nd follow-up survey. In addition, indepth interviews were conducted with 60 students. Multivariate analysis reveals that students who participated in GEA were significantly more likely to support gender equitable attitude, higher education and delay age at marriage for girls, and oppose violence compared to those with no intervention. Further, students from intervention arms reported being more confident in protesting and complaining in case of sexual violence. Evidences suggest the need to engage young children in discussions around fundamental constructions to shifts norms that in turn influence attitudes and behaviors underlying outcomes related to sexuality and health.

### **009. The Impact of a school-based gender-sensitive sexuality education program on adolescents' sexual knowledge, attitudes and self-efficacy in Northwest China**

*Zhihong Sa, Beijing Normal University*

Although emerging evidence underscores the importance of integrating gender perspective to improve the effectiveness of sex education intervention, there is a lack of research on this issue in China. We used data from a quasi-experimental intervention research conducted in 2011/12 to examine the impact of a school-based gender-sensitive sex education intervention on Chinese adolescent's sexual knowledge, attitudes, and self-efficacy. Results show that students in the

intervention group have better knowledge and less permissive attitudes toward sexual double standards than those in the control group. Male students in the intervention group also have less stereotypical attitudes toward gender roles than those in the control group. However, the intervention has no effect on attitudes toward premarital sex and sexual self-efficacy. Further analysis indicates that insufficient parent-child sex communication, peer pressure, internet and social exposure to sex have negative effects on students' permissiveness toward premarital sex and self-efficacy. These counteracting effects, together with short intervention duration, may contribute to the weak intervention effect on premarital sex attitudes and self-efficacy. The study has implications for developing more effective interventions to improve adolescent's sexual and reproductive wellbeing.

#### **010. Demography and Disaster in a Shrinking Region: Assessing the Local Impacts of the Great East Japan Earthquake and tsunami of 11 March 2011**

*Peter Matanle, University of Sheffield*

This paper presents an overview of the disasters of 11 March 2011, focusing on their regional and local contexts, and an assessment of recovery plans. In doing so, it illuminates problems in the planning and reconstruction process, and develops out of these some tentative prognoses. The paper shows that before the disaster the Tōhoku region was already ageing, depopulating, and declining in vitality. Via a case study of two shrinking communities that endured the full force of the tsunami the article shows that there were wide differentials in settlements' experience of the events according to their geographical and demographic circumstances. The paper then provides a brief analysis of post-disaster reconstruction plans. Although plans show commendable ambition in seeking to rebuild shattered communities, there is a danger of creating unrealistic expectations in settlements where ageing and depopulation appear to be accelerating.

#### **010. Dépeuplement de la campagne marocaine: quelle mise à niveau sociale face au défi démographique?**

*Said Chahoua, Haut Commissariat au Plan*

Au dernier recensement de la population réalisé en 2004, le Maroc compte près de 30 millions d'habitants dont près de 45% sont des ruraux. La population rurale qui a vu son effectif passé d'un peu plus de 12,6 millions à 13,4 millions entre 1994 et 2004, a évolué avec un taux de croissance qui ne dépasse pas 0,6% contre 2,1% pour la population urbaine. Ce taux rural de croissance relativement faible occulte de grandes disparités entre les communes rurales composant l'espace rural. En effet, sur 1298 communes, près de 520 ont vu leur population régresser entre les deux derniers recensements, soit plus de 40% des communes rurales. Le dépeuplement de ces dernières trouve son explication principalement dans l'émigration des ruraux vers les autres entités territoriales ou vers l'étranger. L'autre facteur qui a contribué significativement à cette décroissance est le déclin de la fécondité des femmes observé dans plusieurs sous-espaces ruraux. Pour examiner les répercussions de cette décroissance, on utilisera les données des deux derniers recensements à savoir 1994 et 2004. L'analyse des profils démographiques de ces communes rurales permettra d'évaluer l'impact économique et social sur les populations qui y résident. Les cartes de pauvreté de 2004 et 2007 seront également utilisées pour approcher l'impact du déficit démographique.

#### **010. Depopulation in southern Europe : demographic dynamics and spatial patterns**

*Doignon Yoann, Aix-Marseille Université; Sébastien Oliveau, Aix-Marseille University; Alain Parant, Institut National d'Études Démographiques (INED)*

Depopulation is feared by European and western countries as it often signals a society in decline. This paper will examine the question of depopulation, decline and demographic ageing in the countries of southern Europe at infra-national level. It will be divided into three parts. First, we

will identify the regions affected by depopulation. We will then construct a typology of territories in demographic decline based on changes over time in population numbers by sex and by age group. Last, cartographic analysis will be used to verify whether the depopulation process follows a particular spatial logic. This study will be based primarily on census data (age-sex structure) collected at various administrative levels in each country of the study region. We will also use base maps available at several infra-national levels. In addition, our theoretical knowledge of territorial grids and the associated problems (MAUP) will help us to establish our own grid and to avoid certain types of bias in our statistical and cartographic analysis.

#### **010. Subnational Depopulation via Natural Decrease in Europe and the United States in the Early 21st Century**

*Layton Field, Texas A&M University; Dudley L. Poston, Texas A&M University*

Natural decrease results from an excess of deaths over births in the population; that is, in a particular time period the population has more deaths than births. Most demographic analyses of natural decrease have been conducted among the counties and subareas of the United States. In this paper we analyze subnational natural decrease among the countries of Europe and the states of the United States. Using data from EUROSTAT (2011) for the subareas of the countries of Europe for the circa 2000-10 time period, we ascertain, country by country, the degree of natural decrease in their respective county-level areas. In Europe, eight of the 22 countries had more than one-half of its counties experiencing natural decrease in the time period. Almost 60 percent of all the counties in Europe experienced natural decrease in the circa 2000-10 period. Of all 3,221 counties in the U.S., almost 27 percent of them experienced natural decrease in the 2000-09 period. In our paper we also report bi-variate analyses of several variables shown in the literature to be significantly associated with natural decrease, e.g., population size, and we make comparisons between the different dynamics of natural decrease in Europe and in the U.S.

#### **011. A methodological proposal for estimating disability transition rates from cross-sectional health surveys: application to Brazil**

*Marcos R Gonzaga, Universidade Federal do Rio Grande do Norte (UFRN); Bernardo Lanza Queiroz, Universidade Federal de Minas Gerais; Roberto Rodrigues, Universidade Federal de Minas Gerais/ Federal University of Minas Gerais (UFMG/BRAZIL)*

This paper proposes a new method to estimate disability transition rates from national cross-sectional health surveys. The proposed method estimates age-specific transition rates from cross-sectional data according to well-documented longitudinal age-specific health transition rates of other populations, used as standards, and the proportion of health and unhealthy individuals by age, reported in cross-sectional datasets. In order to estimate healthy life expectancy, this paper makes use of most recent Brazilian health survey data. The preliminary results indicate that the estimated disability transition rates are consistent with the current literature. Moreover, the estimated parameters for the simple model specification seem to produce very reliable results. In 1998, 2003 and 2008 the estimated life expectancy – with and without any disability – do not show significant statistical differences from other estimates, produced by other methods. A second exercise will be conducted by estimating the parameters including covariates: sex, race and education and to estimate differentials in healthy life expectancy.

#### **011. A parametric model for old age mortality in mediation analysis**

*Göran R Broström, Umeå University; Soren Edvinsson, Centre for Population Studies, Umea University*

This paper is addressing the modelling of old age mortality and its dependence of factors earlier in life. We argue for alternatives to the widely used proportional hazards (PH) model, especially Cox regression. There are several reasons for this. First, it is well known that old age mortality very

often is well described by the Gompertz distribution. Second, accelerated failure time (AFT) models can be expressed as linear models, which is important when interest lies in the analysis of mediating effects in the analysis of the impact of early-life factors on old-age mortality. Third, the results of an AFT model fit is easier and more intuitive to interpret in terms of years lost or gained, compared to the PH model fit which reports relative risks. Fourth, contrary to "common knowledge", the family of Gompertz distributions is both a collection of PH families and a collection of AFT families, which we demonstrate in the paper. For instance, Kleinbaum and Klein (2005), in their text book on survival analysis, writes: "The Gompertz model is a parametric PH model but not an AFT model". This mistake is reiterated by other authors.

### **011. Adult Mortality Determinants Controlling for Migration Biases – A Two-Stage Competing Risks Model applied to Nairobi HDSS Data**

*Philippe Bocquier, Université Catholique de Louvain; Donatien Beguy, African Population and Health Research Center (APHRC)*

Event history analyses make the explicit assumption of independence between censoring and event. Under this hypothesis right censoring due to survey time does not create a selection bias. However, when censoring is not independent from the event of interest (e.g. migration in relation to death) then results suffer from potential bias. This paper presents a model to deal with non-independent right- as well as left-censoring, when the same determinants may cause in-migration, out-migration and mortality. The model follows the rationale of two-stage regression models controlling for selection biases to control for both observed and unobserved heterogeneity in migration. The method is applied on longitudinal adult mortality data collected by the APHRC Nairobi Urban Health and Demographic Surveillance System (NUHDSS), situated in two Nairobi slums – Korogocho and Viwandani – where circular migration is high. Results confirm selection for both out- and in-migration. The method produces higher adult mortality rates than raw estimates. After controlling for migration effect, median age at death from age 15 would be 46 year old (against gross estimate of 70) for females, and 52 (against 70) for males. Migration is most likely an important strategy adopted by slum-dwellers to avoid health risks attached to slum environment.

### **011. All You Can Fit: Statistical Challenges in Estimating the Human Rate of Aging**

*Trifon Ivanov Missov, Max Planck Institute for Demographic Research; Carlo Giovanni Camarda, Institut National d'Études Démographiques (INED)*

The individual rate of aging is defined as the relative derivative of one's risk of death with respect to one's age. The b-hypothesis, formulated by Vaupel (2010), postulates that all humans share the same rate of aging. In order to check this hypothesis given the existing aggregate data on human mortality, we present several statistical approaches, their advantages and shortcomings, as well as some preliminary conclusions.

### **012. Analysis on Pregnancy rate of Intra-Uterine Inseminations in Unexplained Infertility in Korea**

*Insun Jang, Korean Bible University; nami Hwang, KIHASA/Choi Bung Ho*

Purpose: The purpose of this study is to identify factors influencing pregnancy rate among unexplained infertile couples who received treatment of ART, Intra-Uterine Inseminations. Method: Medical records of 24,201 cases of unexplained infertility among total 31,684 intrauterine insemination treatment cases, which were benefited by 'National Medical-aid Program for ART in 2011' were used for this analysis. Result: Age(OR=0.948), frequency of IUI(OR=0.862), and medical cost(OR=1.022) were significant factors on pregnancy rates in logistic regression analysis. Conclusion: Factors, such as infertile woman's age, frequency of IUI, medical cost were positively influenced pregnancy rate. However, age of spouse was not

significant variable. - Prioritize the infertile couples that one year even with regular and unprotected sexual intercourse for treatment. - The results showed that about 70% of Korean infertile couples were unexplained infertility. The higher proportion of unexplained infertility rather than that of clinical standard. Therefore, we should assess for reasons through the future studies. In addition, affective or emotional factors influencing unexplained infertility need to be researched further.

## **012. Crossing borders to have a child: Case study of French nationals seeking ART in four European countries**

*Virginie Rozée, Institut National d'Études Démographiques (INED)*

In Europe, there are legal and medical disparities regarding assisted reproductive technologies (ART) which lead to cross-border fertility care. This new social and medical phenomenon concerns French nationals, but studies have not yet enabled us to estimate their number, to identify their sociodemographic characteristics or to understand their histories and motivations. The main purpose here is to present, through a case study based on interviews and self-administrated questionnaires, the first empirical evidence on this (new) phenomenon involving French residents, in four selected European countries (Belgium, Denmark, Greece and Spain): Who are these French patients? Why do they cross borders? How do they organize/manage transnational medical care? Compare these data with other available data on use of ART in France will allow to highlight the specificity (or not) of cross-border French patients. We will conclude that the majority of them crossed borders because of their unsatisfied needs and the inadequacies of French fertility care; that cross-border fertility care is organized into transnational paths, and it relies on medical and associative networks.

## **012. Infertile Couple: Right to procreate**

*Amlan Kanti Ray, Spectrum Clinic and ERI*

Assisted reproductive technologies (ART) have buttressed its position as a key alternative of natural conception. The notion of the technology is socially-ethically-legally intertwined with the newer understanding of family and responsibility. The application of ART by IVF practitioners has been implicated not only in the decision-making process borne by the patient-clinician bond but also from the outcome of the knowledge level of couple concerning the number of options. There is a significant association between the access of technology available to couples and the extent of technology usage to be opted by the IVF practitioners poses a serious challenge pertaining to the safety and ethics of the impact of the procedure. The point of conflict rises about the discretionary approach of whether couples primarily require treatment coverage against reproductive disorders or undergoing an ART procedure for assisted conception. This immediately brings about two pertinent questions of rights to be enjoyed by the couples for baby and by the IVF practitioners for using the respective technology. In this paper, I will discuss issues of rights to be imposed by the government, clinicians and couples for 'better understanding of this field' eventually to seek a rationale about the usage of this technique for couple's family procreation.

## **012. The Demand for and Supply of Assisted Reproductive Technologies in the United States: Nationally Representative and Clinic Data, 1995-2010**

*Elizabeth Hervey Stephen, Georgetown University; Anjani Chandra, CDC/National Center for Health Statistics; Rosalind B. King, Eunice Kennedy Shriver National Institute of Child Health and Human Development*

Although Assisted Reproduction Technologies (ART) represent a very small proportion of overall infertility service use in the United States, they drive much of the public's perception about access to and use of medical services to have a child. We examine trends and individual-level correlates for use of medical services to have a child, using data from two sources. The first data source is

the 1995, 2002, and 2006-10 National Surveys of Family Growth (NSFG), each a U.S.-nationally representative, cross-sectional survey of women 15-44 years of age. The second source is fertility clinic data collected by the United States Centers for Disease Control and Prevention/Society for Assisted Reproductive Technology; we analyze clinic data from 1999-2010. This mixed-data approach allows us to determine trends in the demand for infertility services at the national level and to explore diagnoses, medical treatment and outcomes at the clinic level. Preliminary findings from the two data sources indicate an increase in the utilization of ART over this time period, and a decrease in tubal factor and endometriosis as patient diagnoses.

### **013. Family structure dynamics and gender differences in sexual behavior and HIV risk behavior and prevalence in Africa**

*Barthelemy Kuate Defo, Université de Montréal; Roland Pongou, Brown University; Zacharie Tsala Dimbuene, Statistics Canada*

The study of sexual behaviour lies at the heart of understanding the reproductive behavior in human populations and the transmission dynamics of sexually transmitted infections including HIV/AIDS. Perhaps the most widely conjectured demographic and health consequences of polygyny and concurrency of sexual partners is their potential effect on the transmission of HIV and other STIs. Yet, while the combination of long-term concurrent sexual partnerships and high infectiousness early in HIV infection has been suggested as a key driver of extensive spread of HIV in general populations in sub-Saharan Africa (SSA), this has never been rigorously investigated within the framework of multiple marital and non-marital sexual partners owing to the complex feature of family structure in Africa where polygyny is prevalent among married couples and concurrent sexual partnerships practised across marital statuses with potential effects on sexual behavior and HIV risk and HIV prevalence. This paper will take advantage of two unique, complementary and large scale population-based surveys of 32 nationally representative populations from 16 African countries and multilevel cohort data from 141 localities in Cameroon to assess the role of family structure dynamics and gender differences in sexual behavior and HIV risk behavior and prevalence.

### **013. Global trends in contraceptive method mix and implications for meeting the demand for family planning**

*Ann Biddlecom, United Nations Population Division; Vladimira Kantorova, Population Division, United Nations*

Measuring progress in meeting the demand for family planning requires going beyond overall levels and trends to assess the diversity of contraceptive methods used. We examine changes in contraceptive method mix from 1990 to 2010 for 194 countries and how levels and trends in contraceptive prevalence and unmet need for family planning are associated with the concentration and average use-effectiveness of method mix profiles. We draw on annual Bayesian hierarchical model-based estimates of contraceptive prevalence (any, modern and traditional methods) and unmet need for family planning among married women aged 15-49 and apply method mix distributions from surveys. Modern contraceptive methods account for most of current contraceptive use worldwide, and those methods are responsible for nearly all of the increase in contraceptive use since 1990. For most countries one or two methods account for at least half of total use, yet the particular methods that dominate vary widely.

### **013. Contraception et sexualité chez les jeunes célibataires au Maghreb : Représentations et pratiques différenciées chez les femmes et les hommes.**

*Ibtihel Bouchoucha, Université Paris Ouest Nanterre La Défense/CERPOS/INED; Zahia Ouadah-Bedidi, University Paris Diderot (URMIS)/Institut National d'Études Démographiques (INED)*

Dans les pays du Maghreb, la contraception et la santé sexuelle sont souvent analysées uniquement du point de vue des femmes déjà mariées en âge de 15 à 49 ans. Les informations sur les connaissances des méthodes contraceptives, les représentations et les pratiques ne concernaient jusque là que ce groupe de population car, il n'est pas encore admis, dans ces sociétés, que des femmes célibataires puissent avoir une sexualité avant le mariage et encore moins de recourir à une quelconque contraception. Légalement, la vie féconde et reproductive commence avec le mariage. Depuis 2001, une vague d'enquêtes sur la santé de la famille permet de faire des analyses nouvelles dans quatre pays du Maghreb (Algérie, Libye, Maroc, Tunisie) sur la santé de la reproduction des jeunes célibataires femmes et hommes de moins de trente ans (attitudes, représentations et plus indirectement les pratiques sexuelles hors mariage) Après la présentation des données, la communication sera structurée en trois parties. La première décrira le contexte nouveau dans lequel vivent les jeunes célibataires Maghrébins. La deuxième sera consacrée à l'étude comparée des représentations de la sexualité chez les jeunes femmes et hommes et enfin une dernière partie analysera les connaissances, représentations et pratiques différenciées en matière de contraception

### **013. Sexual and Reproductive Health of Women during Three Stages of Her Reproductive Life Span- A Comparative Analytical Study**

*Ajit Kumar Mathur, Indian Council of Medical Research (ICMR)*

Background: RTI/STI are major public health concern amongst women especially in SEAR countries. Majority of women think menstrual problem and vaginal discharge as a part of their normal life and thus continue to suffer silently. Hence it is difficult to estimate the burden of RTI from clinic records and therefore data is extracted from ICMR community based study done in rural parts of the country. Multi level cluster sampling techniques was adopted and ever married women aged 15-45 years was taken as sampling unit. Methods: Information with regards to characteristics of vaginal discharge, education level, occupation etc was elicited from every sampled women. Also both the diagnosis made by ANM and medical doctor was recorded and compared. Results: Out of 5567 of the sampled women, 16 per cent of the women were clinically diagnosed of RTIs that too belonging to low risk population and from villages. The results of logistic regression concluded that MTP, use of OC, high risk sexual behavior, and husband infected with urethral discharge may increase the probability of a women for contracting STIs. Conclusion: The result demonstrating the association should not decrease the acceptance of IUD, OC but should be interpreted carefully.

### **014. Mortality trajectories across demographic, economic and evolutionary response surfaces**

*Oskar Burger, Max Planck Institute for Demographic Research (MPIDR); Jim Oeppen, Max Planck Institute for Demographic Research*

We examine the mortality transition by placing country-specific trajectories on a landscape defined by demographic, social, and economic factors. We identify dimensions of a demographic 'space' that different countries have occupied through time. A population's space is defined by life expectancy, GRR, latitude, and Gross Domestic Product per capita. We also quantify changes in the selection landscape by examining associations between mortality and Fisher's reproductive value, Crow's opportunity for selection, and Ryder's demographic metabolism (the sum of the intrinsic birth and death rates). The large amounts of data (9 countries spanning 315 to 564 years)

and the features of our demographic landscapes identify patterns among economic, selective, and historical factors that cannot typically be revealed in smaller scale analyses. For example, mortality reduction leads to changes in the relative variation of demographic traits, altering the potential for selection. We find that the potential for selection acting on longevity decreases dramatically as probability of survival to adulthood increases and that fertility selection is greatest when fertility is lowest. Likewise, countries often follow very different trajectories across the landscapes as they go through the mortality transition.

#### **014. The Belgian Health Transition and the Dialectics of Progress**

*Patrick Deboosere, Vrije Universiteit Brussel; Abdulaziz A.H. Albader, Central department of Statistics*

For a long time the basic assumption has linked the change in life expectancy between the Flemish and French talking regions in Belgium to the uneven economic development between the regions and to the evolution in relative wealth and socio-economic composition of the population. There is no doubt of the importance of socio-economic factors on population health and mortality, but the pure association over time does not explain the particular mechanisms at work. Moreover, when analysing the shift in age specific mortality between the regions, the age pattern tells another story, not exactly in sync with the shift in socio-economic wealth between north and south. Using historical mortality data and recent individual cause specific mortality data, we try to explore more in depth the factors that caused this inversion in life expectancy and that are still contributing to the enduring lower life expectancy in the Walloon region compared to the Flemish region. The insights based on the detailed analysis of this process illustrates the Belgian case and add insight in the complexity of the general process of the health transition.

#### **014. Visual Explanations for Diverging Mortality Trends in High-Income Countries**

*Roland Rau, University of Rostock; Christina Bohk, University of Rostock; Magdalena Maria Muszyńska, Warsaw School of Economics; James W. Vaupel, Max Planck Institute for Demographic Research*

Life expectancy is increasing in most high-income countries. The development is not uniform, though. Whereas some countries experienced steady progress during recent decades, others have periods of stagnation and, eventually, phases of catching up.

The aim of our paper is to investigate whether comparable developments in life expectancy are based on the same underlying mortality dynamics. We use surfaces of rates of mortality improvement as our tool of analysis. Based on two-dimensional plots of smoothed death rates, our "maps" depict the rate of mortality change over time. We argue that this approach provides an excellent exploratory tool to visually analyze mortality dynamics, in particular to detect age-, period-, and cohort-effects. Preliminary results demonstrate for international comparisons that periods of stagnation followed by rapid increases can be caused by cohort factors (e.g. Denmark) as well as by period factors (e.g. East Germany).

An analysis by major causes of death for the United States shows that antagonistic cohort effects were instrumental for the slow life expectancy increase during the 1980s and the 1990s: If negative cohort effects of respiratory diseases and cancer had been absent, life expectancy would have increased much faster due to improvements in survival for heart diseases.

#### **015. The Age-structural Timing of Democratization in East Asia: Identifying Past Patterns, Hypothesizing Possible Futures.**

*Richard Cincotta, H.L. Stimson Center*

The rise of three of East Asia's most stable liberal democracies—South Korea, Taiwan, and Indonesia—have been noted as examples of the statistical "age-structural timing effect" associated with the past 40 years of political liberalization. As the population of these states surpassed the

median age of 25 years and approached 30, each of their annual freedom-score assessments rose to attain Freedom House's "FREE category". This paper reviews three continuous age-structural models of political liberalization that employ median age to predict the probability of: (1) a state being classified as FREE [existential model]; (2) a state classified as PARTLY FREE or NOT FREE changing to FREE [gain model]; and (3) a state classified as FREE changing to PARTLY FREE or NOT FREE [loss model]. I compare these to three analogous multivariate logistical regression models operationalizing other non-demographic theories of liberalization. Then, using both the age-structural models and their alternatives, I characterize the pattern of liberalization in four regions where a significant number of states have recently liberalized: East Asia, southern Europe, Latin America and southern Africa. Finally, I rely on the set of alternative gain and loss models to speculate on the future of liberal democracy in these regions.

### **015. The Political Demography of Japan's Eldercare**

*Gabriele Vogt, University of Hamburg*

Japan's health-care sector has been and continues to be severely impacted by the nation's demographic change. At the same time, the sector has served as a trigger to some remarkable policy reforms and societal changes alike. This paper will examine three central policy responses to the growing demand of health-care services for the elderly. These are (a) the introduction of the Long-Term Care Insurance in 2000; (b) the introduction of an avenue for international health-caregiver migration from Indonesia and the Philippines to Japan in 2008/09; (c) the ongoing fostering of life-long-learning programs directed toward maintaining physical fitness and psychological vitality among the elderly. These policy responses intersect at questions of labor market structures including the working conditions in the health-care sector, and the changing role of families as the former primary caregivers in this setting. It will be argued that the political demography of Japan's Eldercare serves as yet another example for a more general pattern of the political behavior prevalent among Japan's population. This is the astonishingly low degree of politicization of Japan's population when it comes to aspects of formal political participation, which stands in sharp contrast to the vivid and widespread informal political participation.

### **015. The Political Demography of Korea**

*Eui Hang Shin, Seoul National University*

Korea has undergone remarkable economic development, democratization and globalization over the past forty years. The compressed transformation and social change have produced distinctive cohorts resulting from exposure to drastically different stages of economic, social and political development or, at least, experience of the same conditions but at different life-cycle stages. The Korean population has also experienced extremely low fertility and rapidly improving longevity during the same period. Such demographic transformation has brought about a significant change in the age composition of the population in that the size of younger birth cohorts tends to be smaller than that of older birth cohorts. Korea is an interesting case where industrialization and democratization on one hand and demographic transition on the other have manifested persistent interrelations. This study analyzes the effects of these demographic changes on political processes in Korea since the 1970s. In the first part, I will investigate cross-sectional variations in public opinion on such policy issues as pension benefits, health care, terms of obligatory military service, child care support and mandatory age at retirement. In the second part, I will examine age group variations in attitudes toward inter-Korean relations and international relations with China, Japan and the United States. In the third part, I will look into age, period, and cohort effects on Korean voting behavior in national elections since the 1970s. Using the multiple standardization method I will attempt to determine the relative importance of age, period and cohort effects on voting behavior and on the outcomes of presidential and parliamentary elections. The focus of the study is

to shed light on generational politics, in particular generational conflicts and alliances with respect to economic, political and international relations issues in Korea.

#### **016. Couples' Characteristics and the Correlation of Husbands' and Wives' Health.**

*Gilbert Brenes-Camacho, University of Costa Rica*

Living together creates the conditions for a spouse's health to be inter-related with the health of the other spouse, especially among middle-aged or older couples. The article explores the association between the determinants of a couple's health and a set of biomarkers, through a system of simultaneous equations –one for each spouse, as well as secondary equations for controlling endogeneity– using a dataset of middle-aged adults from Costa Rica. There are positive correlations between the errors of the paired equations, although the size of the correlations is relatively small (around 0.10). Individual and economic variables do not seem to have a strong effect on health, but self-reported stress is related with both own and spouse's health. Female spouse's self-reported stress is directly associated with male's levels of cholesterol, HDL, and CRP, while male spouse's stress is positively associated with several female health variables: cholesterol, HDL, HbA1C, and systolic blood pressure.

#### **016. Living arrangement trajectories and extreme longevity**

*Michel Poulain, Université Catholique de Louvain; Anne Herm, Tallinn University*

How socio-demographic characteristics could explain extreme longevity? In this contribution we consider beside age and sex the matrimonial history and the living arrangement trajectory. Data used are extracted from the continuous registration system in Belgium. Compared to longitudinal surveys, administrative data are also suitable for longitudinal studies. They give less information but include the date of death with the situation of the person at death. The method used is survival analysis. 3000 Belgian centenarians are concerned including 659 men. Most centenarians were widowed at death, few were still married while 274 women and 32 men were never married. Among female centenarians, 55% were younger compared to their husband while for male centenarians, 81% were older. Early widowhood favours longevity for women but not for men. For living arrangement, more than half of the centenarians were institutionalized at death but the timing of their entry in nursing home is later compared to the total population. Living in married couple is protective but being single and living alone is also profitable for women only. Concerning the impact of the living arrangement trajectory on survival to extreme ages, living in institution increases mortality risk but this effect decreases at older ages.

#### **016. Spousal Concordance in Exceptional Longevity: The Interplay Between Social Origin, Marriage and Survival**

*Valerie Jarry, Université de Montréal; Alain Gagnon, Université de Montréal; Robert Bourbeau, Université de Montréal*

Spouses of centenarians have a survival advantage compared to their birth cohort. However, less is understood about the pathways by which spousal similarity in exceptional survival exactly operates. This study investigates whether positive homogamy and/or shared environment are related to the resemblance among spouses and how it can explain why spouses of centenarians are more likely to achieve a very long life span. Our sample consists of 850 validated French-Canadian centenarians who died between 1985-2005, and their spouses. Using early-life family variables gathered from the 1901 and 1911 censuses and measuring the social level of the family, we investigate through homogamy models and logit models if there is a tendency to partner with individuals of the same social origin. Consideration will mainly be given to the Assortative Mating hypothesis, which argues that spousal concordance in health and longevity is largely a result of a selective process through which individuals choose partners based on a similar social origin and shared childhood characteristics, and to the Shared Resources Hypothesis. Results could shed light

on the extent to which spousal concordance in longevity is channelled through social origin in early life and could put forward the impact of lifecourse events in achieving old-age mortality.

#### **016. The Effect of Widowhood on Mortality when the Precedent Spouse Died from Alcohol Related Death or Accidental and Violent Death**

*Netta Mäki, University of Helsinki*

Previous studies have shown that bereavement is associated with increased mortality. However, the amount and nature of post bereavement mortality can be assumed to differ by various circumstances surrounding widowhood. One such factor is the cause of death of the precedent partner. We used data from a population registration database at Statistics Finland with detailed sociodemographic information to examine the excess mortality among those bereaved by two specific groups of causes of death of a precedent spouse (altogether 43 100 bereavement persons of whom 7 858 died during the follow-up). The method includes Cox regression model and the results are presented as hazard ratios (HRs). Among the widowed men and women, mortality from external causes of death was 4.69 -fold when the precedent spouse had died from alcohol related death and as high as 10.09 -fold when the cause of death of the precedent spouse was accidental and violent. Mortality risks were especially large soon after the death of a spouse. Immediate stress and the grief of bereavement are thus some of the causal mechanism leading from the loss of spouse to mortality. Support to those widowed should be a priority. Especially vulnerable are those bereaved by alcohol related causes of death or accidents and violence and soon after the bereavement.

#### **017. Ambivalent cultural schemas: why teachers feel uncomfortable teaching comprehensive school-based sexuality education in Uganda**

*Billie de Haas, University Of Groningen; Margaretha Timmerman, University Of Groningen; Inge Hutter, University Of Groningen*

Societal changes in Uganda have created an adolescent period in which young people experience sexual needs but are not supposed to be sexually active yet. This paper explores how these societal changes affect teachers' comfort to teach sexuality education. Cultural schema theory is used to explore teachers' cultural schemas of sexuality education and the conflicts that arise, and to explain why this causes teachers to feel uncomfortable when teaching sexuality education. In-depth interviews were conducted with 40 secondary school teachers in Kampala, capital of Uganda. Findings show that teachers experience ambivalence between their traditional and present cultural schemas of teaching sexuality education. Traditionally, sexuality education has been regarded as immoral and an indirect approval for students to become sexually active. But in the present society, teachers feel that sexuality education is necessary to balance positive and incorrect sexuality messages circulating in society and to help students control their sexual needs in order to postpone sexual initiation. Teachers feel uncomfortable because teaching sexuality education may contribute to their students' sexual and reproductive well-being but, at the same time, it may jeopardize the respect teachers enjoy in society.

#### **017. HIV Knowledge, Sexual Context, and Contraceptive Use at Sexual Debut among Urban South African Youths**

*Kate C. Prickett, University of Texas at Austin; Leticia Marteleto, University of Texas at Austin*

Prior research has been concerned with the small correlation between high levels of HIV prevention awareness and actual contraceptive use among South African youths, suggesting that alternative explanations are needed to explain youths' contraceptive use in a high HIV-prevalence society. One potential explanation is the ability of youths' to effectively negotiate contraceptive use, especially among girls. This research uses the Cape Area Panel Study (n=1,380) to examine whether HIV prevention-related knowledge prior to first sexual intercourse and characteristics of

youths' first sex partner predict condom and other contraceptive use at first sex. We find that, similar with prior research, HIV prevention-related knowledge does not predict condom use for either males or females, however among females, having a partner who was two or more years older at first sex decreased the likelihood of using a condom by over 40%. This study extends prior research by using longitudinal data to predict behavior based on HIV knowledge and awareness prior to sexual debut and exploring other potential pathways, such as power dynamics within relationships that may influence the ability of youths to effectively negotiate contraceptive use. These findings have important implications for reproductive and sexual health programs in Sub-Saharan Africa.

#### **017. HIV testing among youth attending secondary school in Kenya: A multi-level analysis**

*Eric Y Tenkorang, Memorial University; Eleanor Maticka-Tyndale, University of Windsor*

Using hierarchical linear models, we identify both individual and teacher/school level factors that affect voluntary HIV testing among young people attending secondary schools in Kenya. Separate models are built for males and females. Results indicate that young Kenyans, both males and females, are more likely to test for their HIV serostatus when they have specific knowledge related to VCT, are involved in HIV/AIDS activities from primary school, have HIV information available in their respective secondary schools, perceive themselves at high risk of contracting HIV, know whether someone is infected or has died of HIV/AIDS and have ever engaged in sexual intercourse. On the other hand, indicating that they are afraid to go to a VCT centre, and cannot go to a VCT centre because people will think they are HIV positive are barriers to testing among the young secondary school students. Teacher/school level characteristics are relevant in explaining HIV testing, especially among female students. Female students with teachers who incorporate HIV information into their academic curriculum are more likely to test for HIV.

#### **018. EU-Policies and Fertility: The Emergence and Implementation of Fertility Issues at the Supra-national Level**

*Gerda Neyer, Stockholm University; Arianna Caporali, Institut National d'Études Démographiques (INED); Nora Sanchez-Gassen, Max Planck Institute for Demographic Research*

The paper deals with policies and fertility at the European level. During the past decade demographic and fertility issues have come to the fore at the European Union level. The Green Paper "Confronting demographic change: a new solidarity between the generations", the establishment of an expert group on demographic issues, the European Demography Forum, and the European Demography Reports are signs of the gain in importance of fertility issues at the EU level. So far, the competences to deal with fertility issues have been mainly with the member states. It is not clear whether the EU initiatives mark the emergence of a new policy field within the EU or whether established policy issues are given a new framing. This paper traces the origin and development of fertility relevant initiatives at the European level starting with the Treaty of Rome in 1957 up to the present. It analyses the processes of the development, the motivations of the initiatives, the implementation at the European level, and the consequences for fertility relevant policies at the level of European member states. It thus allows us to determine to what extent the EU initiatives are steps towards a co-ordinated European effort to tackle low fertility.

#### **018. The Contribution of Mothers of Foreign Descent to Total Fertility: the Recent Recovery of Period Fertility in Flanders (Belgium)**

*Lisa Van Landschoot, Vrije Universiteit Brussel; Jan Van Bavel, University of Leuven; Helga De Valk, NIDI/Vrije Universiteit Brussel*

Period total fertility has been recovering in Europe since the early 21st century and the role of immigration has been questioned in this regard. In this paper we aimed to study the extent to

which mothers of foreign descent contributed to this recovery of period fertility in the Flemish Region of Belgium. Besides calculating fertility rates for different nationality groups, we furthermore proposed a method to indirectly assess the impact of births to foreign women on age-specific and total fertility in a context where this information is lacking. Results show first that fertility in the Flemish Region of Belgium is minimally affected by women of foreign nationality. Second, we find that period fertility would also have recovered if naturalized women would not have given birth. We conclude that the fertility recovery is mainly due to the increase of the fertility of women over 30 and reduced fertility postponement among native women.

#### **018. Effects of Germany's New Parental Leave Policy: Work-Family Reconciliation Patterns and Fertility of Highly Educated Families**

*Martin Bujard, Federal Institute for Population Research; Jasmin Passet, Federal Institute for Population Research*

In 2007, Germany introduced an income-related paid parental leave with an explicit incentive for fathers. This much noticed policy reform has several goals such as raising female labour market participation and gender equality, also it aims raising fertility. Five years after introduction of this paid parental leave is a good time to take stock and analyse the effects. Does this new policy affect fertility behaviour? How have female occupational patterns changed? Do parental leave effects differ from the experience of Northern European countries? This paper goes into the matter by analysing both SOEP and Micro Census for the period 2003-2010. The combination of those data sets allows the use of both event history analyses (SOEP) and cross-sectional differentiations with high N (Micro Census) – combining the strengths of both potential German data sets. The results show effects regarding the different goals of this policy. Although there is no general effect of the reform on the transition rate to the 2nd child, we observe an increase of fertility for high educated women. The female labour market participation increases for mothers of toddlers. Additionally, the care participation of fathers increases. Finally, the findings of this German case study are discussed in the light of the current research on policy effects.

#### **018. Why is it difficult to achieve the ideal number of children? Answers in the case of South Korea**

*Soo-Yeon Yoon, University of Illinois at Urbana-Champaign*

This paper examines the role of micro-level gender equity in explaining low fertility. Building on Peter McDonald's (2000a; 2000b) theory of gender equity, I expand the concept of gender equity to micro-level by incorporating individual lived experience, attitudes associated with gender roles, and women's household decision making ability. I select South Korea as a case study in which both institutional forces of lowest-low fertility and massive social and economic changes come into play in shaping women's childbearing behavior. I address the following two research questions: What are the factors that influence women's fertility goal attainment over time? Does micro-level gender equity play a large role? This paper is based on three waves of the Korean Longitudinal Survey of Women & Families from 2007 to 2010. These results can expand upon McDonald, and enhance the ways in which how gender equity can be better conceptualized and operationalized for studies of fertility variations across individuals, even within a single context with lowest-low fertility. The individual-level investigation highlighting the role of micro-level gender equity may provide insights into women's resilience in making larger family preferences within the institutional context that support lowest-low fertility.

**019. Exploring the Myth of Mixed Marriages in India: Evidence from a Nation-wide Survey**  
*Srinivas Goli, International Institute for Population Sciences (IIPS); Deepti Singh, International Institute for Population Sciences; T.V. Sekher, International Institute for Population Sciences (IIPS)*

Marriages in India are essentially endogamous in nature. The influences of western education and socio-economic transformations have led to enormous change in the existing pattern of choosing one's life partner and marriage practices in India. For the first time, this paper presents a comprehensive empirical assessment of the extent of mixed marriages by analyzing nationally representative data from the Indian Human Development Survey (IHDS, 2005). We consider mixed marriages in the following key aspects: Inter-caste marriage, Inter-religious marriage and Inter-economic group marriage (Inter-class marriage). The trend analyses reveal that the proportion of inter-caste and inter-religious marriages has doubled in the last two and half decades. With the exception of inter-class marriages, the absolute level of mixed marriages is still exceedingly small. Besides, there are substantial variations across the states. Regression analyses show a significant socio-economic differential in the occurrence of mixed marriages. The study reveals that a very few women have the freedom to choose their spouse. These findings assume importance in the context of an increasing number of 'honour killings' in India in the recent years.

**019. Space and interracial marriage: how does the racial distribution of a local marriage market change the analysis of interracial marriage in Brazil?**

*Maria Carolina Tomas, Universidade Federal de Minas Gerais (UFMG)*

This article focuses on the following question: How would interracial marriage rates change when considering the racial distribution of the local marriage market? I used data from the Brazilian Census for the years 1991 and 2000 and loglinear models. The results show that homogamy-heterogamy rates have traditionally been overestimated, as demonstrated by a change between 15.3 percent to 43.16 percent, when the local racial distribution of spouses is considered. The gap between the percentage differences is smaller in 2000 than in 1991. When analyzing the homogamy-heterogamy rates for each marriage market, one observes that the interaction between a spouse's race and the marriage market is important, with very few exceptions. In addition, although most mesoregions have homogamy-heterogamy rates equal to the average level, there are some important regional differences, especially in the South, where the levels are higher than the average.

**019. Status Exchange? Remarriage and Intermarriage**

*Zhenchao Qian, The Ohio State University; Daniel Lichter, Cornell University*

Individuals seeking to remarry often face a more restricted marriage market compared with those searching for marriage for the first time. Marriage market constraints after divorce mean that individuals must often "cast a wider net" that includes potential partners of different ages, education, racial backgrounds, or nativity status. In this paper, we identify marriages formed in the previous year from 2008 to 2010 microfiles of the American Community Surveys. We examine whether remarried couples are more likely to cross racial/ethnic or nativity boundaries to form intermarriage than first married couples. We formulate hypotheses based on status exchange theories. Our results reveal that remarried individuals are more likely to form white-minority marriages than first married couples. In addition, marriages involving at least one person who has been previously married (i.e., divorced) are more heterogeneous in marriage order, educational attainment, and age than those couples in which both spouses are in first marriages. These results suggest strong status exchange in intermarriage among the remarried.

### **019. Unions mixtes au Bénin : une tolérance culturelle de moins en moins défavorable à la jeune fille**

*S. Esperance Demate, Groupe d'Etude et de Recherche Démographiques et Sociales (GEReDeS); A.S. Achille Tokin, Groupe d'Etude et de Recherche Démographiques et Sociales (GEReDeS)*

Le mariage est une institution qui unie non seulement un homme et une femme mais également noue des rapports entre certaines classes sociales. Depuis longtemps il a été communément plus admis aux hommes qu'aux femmes d'aller chercher leur conjointe dans leur confection religieuse. Aujourd'hui, un changement de la nuptialité s'observe et sa compréhension est un défi qui se pose aux spécialistes des sciences sociales. Il est donc question dans cette étude, de voir l'influence de la religion sur les tendances du mariage mixte au Bénin afin de contribuer à l'amélioration des connaissances sur les causes du changement dans la nuptialité. Pour ce faire, nous avons utilisé les données des EDS. La méthode d'analyse présentée dans ce travail est la décomposition, une démarche statistique qui nous permet de voir les tendances pour une femme ou un homme d'entrée en union mixte selon son appartenance religieuse. Les résultats de la décomposition simple attestent la prédominance de l'effet de performance dans les changements de nuptialité. Cette communication a permis d'analyser les transformations religieuses en cours en matière de nuptialité. Elle montre clairement le changement de l'ampleur des unions conjugales mixtes au niveau des hommes et des femmes selon leur religion.

### **020. The Globalization of Migration: Has the world really become more migratory?**

*Mathias Czaika, International Migration Institute -University of Oxford; Hein De Haas, International Migration Institute University of Oxford*

This paper analyses shifts in global migration patterns between 1960 and 2000. In order to operationalize the concept of 'globalisation of migration', the paper elaborates separate Emigration Dispersion and Immigration Diversification indices, which simultaneously capture the spread, distance and intensity of international migration. The results challenge the idea that there has been an increase in the intensity, diversity and geographical scope of migration per se. Migration has globalized from an origin country perspective but not necessarily from a destination country perspective. While global migration rates have declined over the past 50 years, migrants from an increasingly diverse array of origin countries have concentrated in a decreasing pool of prime destination countries. Major shifts in the scope, direction and diversity of migration primarily manifest themselves on a (sub-) regional level. The main shifts in global migration have been directional and are linked to major geopolitical and economic shifts. While the global migration map has changed, access to international migration remains unequally distributed and most migrations remain concentrated in a few large migration corridors. Rather than refuting the globalization of migration as such, this seems to reflect the asymmetric nature of globalization processes.

### **020. Innovations in International Migration for use in Global Population Projections**

*Nikola Sander, Vienna Institute of demography; Guy J. Abel, Wittgenstein Centre (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences; K.C. Samir, International Institute for Applied Systems Analysis (IIASA)*

Advances in projecting international migration have been hindered by a lack of adequate data. Consequently, international projection-making agencies commonly use simplistic assumptions of net-migration measures derived as residuals from demographic accounting. However, past net migration can be often volatile and are known to introduce inaccuracies when projecting populations (Rogers, 1990). This paper presents a set of global population projections to 2060, focusing on alternative international migration assumptions. Expert-based assumptions about fertility, mortality and migration developed for the new edition of the Wittgenstein Centre (WiC) global population projections are combined to project each country's population. We overcome the

limitations of using net-migration models and zero convergence assumptions by drawing on a first-of-a-kind set of estimated quinquennial bilateral migration flows developed by Abel (2012). Using a multiregional cohort-component projection model, alternative future migration trends are explored based on a set of ‘what-if?’ scenarios. Our results highlight differences in the future level and distribution of populations around the globe between a constant-rates, a convergence to zero-net, a zero flows and two ‘what-if’ scenarios.

## **020. Projection of net migration using a gravity model**

*Joel E. E Cohen, Rockefeller University*

Countries and demographers differ regarding the definition, estimation, and projection of international migrant stocks and migration flows. Despite these difficulties, the United Nations Population Division prepares, every two years, estimates, referring to past quantities, and projections, referring to future quantities, of net migration (immigration minus emigration) for all countries and regions of the world. We compare two examples taken from the World Population Prospects: The 2010 Revision (United Nations, Department of Economic and Social Affairs, Population Division, 2011), with alternative projections of net migration based on gravity-type models for migration flows (Cohen et al., 2008 and Kim and Cohen, 2010). The two examples refer to (a) net migration from less developed regions to more developed regions and (b) net migration from the rest of the world, excluding the United States of America, to the United States of America. In both examples, the UN projections assume net migration declines to 0 by 2100. By contrast, in the gravity-model projections, net migration rises smoothly to a plateau about twice as high as present estimates of net migration; net migration ceases to increase as the populations of origin and destination countries stabilize.

## **020. Immigration status and labour market integration**

*Alessio Cangiano, University of the South Pacific*

While recent research has underlined the importance of immigration and integration policies in understanding the immigrant pathways of socio-economic inclusion, little empirical analysis exists on the labour market experiences of migrants admitted through different immigration channels (e.g. labour, family, asylum, study). This paper addresses this knowledge gap. It begins with a conceptual discussion on how migration policies influence the size, personal and professional attributes, and access to the labour market of the different immigrant categories. My empirical analysis builds on the 2008 Ad-Hoc module on migrant workers of the EU Labour Force Survey which offers the unprecedented opportunity to break down the migrant workforce by immigration categories approximating status on arrival. Regression analyses are used to ‘isolate’ the impact of the immigration route as a determinant of economic inclusion. Results show that immigration status on arrival affects the labour market outcomes in terms of both economic activity and access to an employment commensurate to the migrant skills, with family migrants and refugees retaining a disadvantage in almost all EU destinations. I conclude by reflecting on the implications of different national admission systems for the migrant labour market integration.

## **021. A cohort comparison of relationship between mobility and union formation among young adults in the US**

*Bohyun Joy Jang, The Ohio State University; Anastasia Rebecca Snyder, The Ohio State University*

Migration and residential mobility hold significance among young adults in the transition to adulthood, representing a life course event such as a transition to independence from parents and family, a turning point which diverts previous experiences, and an investment behavior for maximizing life chances. Despite several studies on the relationship between mobility and family formation, little is known about the role of mobility in union formation (i.e., marriage and

cohabitation) and how that relationship has changed over time. By using two comparable datasets of different birth cohorts from the National Longitudinal Survey of Youth 1979 and 1997 (NLSY79 and NLSY97), this study examines how moving events are related to union formation and how the relationship has changed across decades in the United States. As the NLSY studies have collected panel data from nationally representative samples of two birth cohorts, that is, those born in 1957-1964 for the NLSY79 and born in 1980-1984 for the NLSY97, the current study will contribute greatly to understanding the changing role of migration and residential mobility as a life course event in the United States.

### **021. Husbands' Out-migration and Familial Support at Origin: An Insight about Left-behind Wives from Rural Varanasi**

*Sujata - Ganguly, BBC Media Action, New Delhi, India; Sayeed Unisa, International Institute for Population Sciences (IIPS)*

Families have to make adjustments in their lifestyles and shoulder greater responsibilities as a consequence of the migration of a male member. Hence an attempt has been made in this paper to study the living arrangements of left behind wives (due to male out-migration) and the extent of familial support they get at 'origin'. Primary data has been collected during January-March 2010 by undertaking a complete house listing of six villages of Pindra block of Varanasi, a district in the state of Uttar Pradesh in India. This research found that the wives left behind reside mostly with their in-laws, with some moving from non-nuclear households to nuclear households. Moreover, parents-in-law have more of an influence on the lives of the wives left behind than parents do, providing more (and different types of) support for them in the absence of their husbands.

### **021. Migration and Family Formation Dynamics in Nigeria: An Exploration of Linkages between Migration Status and Reproductive Behaviour**

*Sunday Tunde Omoyeni, Student; Akanni Ibukun Akinyemi, Obafemi Awolowo University, Ile Ife; Adekunbi Omideyi, Obafemi Awolowo University, Ile Ife*

Migration process has implications for changing fertility behaviour and family formation through adaptation, disruption, and selection processes. The study analyzed differentials in fertility levels of migrant and non-migrant married women and factors associated with these, using NDHS 2008 dataset. Findings of the study found evidence of substantial variations in the fertility levels of migrants and non-migrants. The mean children ever born for migrants and non-migrants were estimated at four and five children respectively. The odds of reporting five or more children increased by 27% among non-migrants compared to migrants counterparts. Amongst other variables predicting fertility behaviour, age at first marriage, education, women in high wealth index from Yoruba tribe and partners' education exercised greater effects on lowering fertility among migrants than they did among non-migrants. The study raises issue on the implications of migration process for fertility reduction and the need for profound focus on the factors sustaining high fertility in Nigeria.

### **021. The Effects of Fertility Intentions on Short and Long Distance Moves**

*Michael Feldhaus, University of Bremen; Johannes Huinink, University of Bremen; Sergi Vidal, Universität Bremen*

The aim of this paper is to shed more light on the association between fertility and the relocation of the household. We address the question of how fertility intentions affect the probability of couples to move over short or long distances. We add to the literature on two grounds.

Theoretically, following a life-course approach we discuss a model underpinning the assumption that behavioral intentions in one life domain (fertility) impact manifest behavior in another dimension of the life course (spatial mobility). Empirically we offer novel evidence on how residential mobility is used as a tool to accomplish fertility goals supporting an understanding of

residential mobility as a byproduct of fertility decisions. We use data from the German Family Panel (pairfam) with rich longitudinal information on fertility intentions and realization as well as spatial mobility and spatial aspects of living arrangements of couples. Preliminary results confirm that fertility intentions have effects on the probability of short or long distance moves depending on whether the couple intent to have a first or an additional child.

## **022. Factors Associated to the Labor Participation of Elderly in Mexico**

*Abraham Granados Martinez, Universidad Nacional Autónoma de México; Isalia Nava-Bolaños, Universidad Nacional Autónoma de México; Bernardino Jaciel Montoya-Arce, Centro de Investigación y Estudios Avanzados de la Población; Hugo Montes de Oca-Vargas, Centro de Investigación y Estudios Avanzados de la Población*

In Mexico a small proportion of the elderly is covered by pensions and a large number receive an insufficient pension. The question is how people survive into old age. Independent of whether or not they are pensioned, an option is working. The results of the Population Census 2010 show that 30.6% of the individuals aged 60 or older participate in the labor market. Our main objective in this paper is to review which factors are determinants of the labor force participation of elderly in Mexico. Based on the Census data we estimate a logistic regression model, separately for the three age groups (60-64, 65-74 and 75+). In the three age groups our main results show that men are more likely to participate in the labor market; and have a pension and a disability reduce the likelihood of participation. But, the marginal effects of these variables decrease in the last groups.

## **022. Institutional Determinants of the Retirement Patterns of China's Urban and Rural Residents**

*John Giles, The World Bank; Xiaoyan Lei, Peking University; Yafeng Wang, Peking University; Yaohui Zhao, Peking University*

Rapid population aging in China, by raising old-age dependency ratio and reducing labor supply, threatens to slow down economic growth. However, the dependency burden and labor shortage can be alleviated if the working life can be extended. Whether or not retirement can be postponed requires an understanding of the determinants of labor force participation of older workers. In this paper, we utilize the national baseline data from the 2011-12 China Health and Retirement Longitudinal Study to document the large differences in retirement between urban and rural residents and to motivate a discussion of how institutions influence divergent retirement patterns. Defining retirement to mean actually stopping work, we find that retirement patterns are indeed very different in urban and rural China. Urban Chinese retire at very early age but rural elderly “work until dropping”. The difference is possibly explained by mandatory retirement policy applicable to urban workers, generosity in permitting early exit from career jobs in the urban retirement system, greater coverage and generous pension in urban areas, and a large urban-rural gap in economic and family resources available for elderly support. Regression results suggest that institutions explain a substantial fraction of the urban rural differences in labor force participation.

## **022. Labor force participation patterns and occupational segregation of older Argentineans and Brazilians**

*Gabriela Adriana Sala, Centro de Estudios de Población (CENEP); Ana Maria Hermeto Camilo Oliveira, Universidade Federal de Minas Gerais (UFMG)*

Our goal is to discuss trends and some consequences of the growth in the share of elderly in the labor supply in Argentina and Brazil. As a reference to the discussion about the consequences of these trends, we analyze the differences in the patterns of participation of the elderly population with respect to gender, age, education and family status. We also address the various patterns of participation in terms of types of occupations and economic sectors, in which the labor demand for older individuals prevail, discussing changes in occupational segregation by age and identifying

niches that enable continued employment, in contexts of high unemployment, job insecurity, technological changes and improvements in the education of younger workers. We are interested in exploring the segregation of a target group, but a multidimensional approach to segregation, as a measure related to the concept of diversity. In this context, the introduction of occupational status into the analysis is relevant, since the tendency of some demographic groups to concentrate in low pay/status jobs has an important impact on their well-being levels. We address this in a multi-group context taking into account the type and status of occupations.

## **022. Who among the Elderly Participate in the Labour Force in India?**

*Bheemeshwar Reddy Amireddy, Indian Statistical Institute*

This paper examines the labour force participation rate (LFPR) of older persons in India from 1983 to 2009-10, and analyses how different socio-economic and demographic factors are associated with labour force participation decision making at older age. It also reviews the conditions of work for the elderly in India. The results show that LFPR of older persons remained almost constant between 1983 and 2009-10, whereas during the same period the proportion of older persons living with their adult children has declined. Further, the results from logit model show that among the elderly those who belong to relatively poor socio-economic status are more likely to participate in the labour force. Also it is observed that large percentage of the elderly workforce engaged in poorly paid jobs in the informal sector, either as casual workers or as self-employed in low skilled or unskilled occupations. This suggests that given the inadequate social security for the majority of the older persons and the declining traditional support from adult children with the growth of nuclear families, continuing to work can be the only option for old age support for the majority in India.

## **023. Relative versus Absolute: Comparing wealth and poverty impacts on population and health**

*Shea Oscar Rutstein, ICF International, Inc.; Sarah Staveteig, MEASURE-DHS, ICF International*

The Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) contain a “wealth” of information on the health and demographic conditions of national populations in less developed countries. With the development of the DHS Wealth Index, a new avenue of analysis has been opened up to investigate economic status inequalities beyond those of educational attainment, residence and ethnic group membership. There has been a substantial limitation to this analysis in that the DHS Wealth Index is relative to the situation in each country at the time of the survey. Each index has a mean value of zero and a standard deviation value of one. Thus specific scores and quintile values represent different levels of economic status between surveys and cannot be directly compared. This paper describes a newly developed methodology for calculating wealth indexes comparable across country and time that allow for direct comparison of levels of economic status. The paper then proceeds to present inequality measures including Lorenz curves, Gini coefficients, and Concentration Indexes for wealth and for a set of demographic and health indicators. Finally, the paper determines the contribution of relative and absolute measures of poverty to progress in these indicators.

## **023. Fertility Intentions, Child Growth and Nutrition in Northern Malawi.**

*Angela Baschieri, University of So; John Cleland, London School of Hygiene and Tropical Medicine (LSHTM); Kazuyo Machiyama, London School of Hygiene & Tropical Medicine; Sian Floyd, London School of Hygiene And Tropical Medicine; Albet Lazarous Nkhata Dube, Univ of Malawi; Anna Molesworth, London School of Hygiene and Tropical Medicine; Menard Chihana, Koranga Prevention Study; Judith Glynn, London School of Hygiene and Tropical Medicine*

(LSHTM); *Amelia C Crampin, London School of Hygiene and Tropical Medicine (LSHTM); Neil French, London School of Hygiene And Tropical Medicine*

Although there is wide agreement that the promotion of family planning lowers fertility, it is not clear to what extent greater contraceptive use and smaller family sizes will enhance investment in human capital and economic growth or what are the consequences of unwanted or unintended childbearing on children's life chances. We inform this debate by analyzing data on fertility intentions and children's anthropometric measures collected as part of an on-going Demographic Surveillance Site (DSS) in Karonga District in Northern Malawi. We applied Propensity Score Matching to assess the effect of 'unintendedness' on child growth. This study analyzes the effect of prospective fertility intentions on the nutritional status of the index child and the siblings of the index child after one and two years using both data on retrospective and prospective fertility intentions.

### **023. Fertility Transition and Poverty Reduction in Districts of India**

*Sanjay K Mohanty, International Institute for Population Sciences (IIPS); Rajesh Kumar Chauhan, Population Research Centre, Department of Economics, University of Lucknow; Mamta Rajbhar, Ips, Mumbai*

Demographic research in last two decade have extensively focused on fertility change at micro level but less in districts of India. Using data from census of India 1991, 2001 and 2011, the consumption expenditure data of 2004-05 and 2009-10 and the district level household surveys 2002-03 and 2007-08, this paper examines the pattern of fertility transition and explore the relationship of fertility change and poverty reduction in districts of India. The crude birth rate (CBR) and the total fertility rate (TFR) is estimated for all districts of India using population in 0-6 age group from 2001 and 2011 census and the estimates of 1991 are borrowed from census estimates. The poverty head count ratio is estimated from consumption expenditure data. The relationship of population growth, fertility and money metric poverty is examined using the fixed effect and random effect model. The relationship of poverty and TFR in districts of India is becoming weak over time. The regression coefficient of female literacy, hospital based delivery and sterilization are negative and significantly with TFR and CBR and that of early marriage of girls is positive and significant. However, the level of poverty is not significantly related to fertility change.

### **023. Poverty, migration and access to social programs in Mexico**

*Israel Banegas, Universidad Nacional Autónoma de México; Agustín Escobar Latapí, cieras occidente*

The aim of this paper is to analyze the relationship between international migration and access to social programs in the context of poor households in Mexico. Are there any differences in the access to social programs between households with migrants and households without migrants? This is a relevant question in lieu of a changing pattern in international migration in Mexico, where the bibliography has shown that poor households have started to have members that migrate to the US. We use a cross-section household survey of the most impoverished municipalities in Mexico (2011) to characterize households with international migration experiences and their differences in access to conditional transfer programs: Oportunidades, Setenta y más, and Seguro Popular. With this survey, it will be possible to estimate the wellbeing of households, their access to the most important social programs in Mexico, and socio-demographic of households that will be validated with census information. Impact evaluation of these social programs have presented mixed results in finding an increasing probability of migration due to access to social programs. Thus, the main contribution of work will be to provide evidence about the processes with which the links between poverty, migration, and access to social programs occur.

#### **024. Communicating with Siblings about Sexual and Reproductive Health: Likelihood, Gendered Patterns, and Learning Mechanisms among Adolescents**

*Dela Kusi-Appouh, Population Council*

Siblings can play a significant role in shaping adolescents' attitudes and behaviors. Existing studies have mainly used European and European-American samples, neglecting sibling relationships and communication in non-Western contexts. This study fills research gaps by focusing on adolescents in Ghana (mean of 3.3 siblings) and demonstrates that adolescents generally receive similar health information from their siblings as they do from parents, school, friends, and the media. The study finds that: (1) older siblings advocate for sexual abstinence and early pregnancy prevention; (2) 15-19 year old adolescents are more likely to communicate with older siblings, while out-of-school males and rural females are less likely to do so; (3) communication is more likely to occur in same-gender dyads; and (4) siblings' personal experiences can offer adolescents unique perspectives and learning opportunities that can impact their transition to adulthood. This study's findings call for considering siblings as an important target group in adolescent-related interventions.

#### **024. Evaluating the Impact of the Ishraq Program in Egypt**

*Asmaa Elbadawy, Population Council*

I assess the impact of Ishraq, a second-chance informal education program for adolescent girls in rural Upper Egypt. The program provides literacy and life skills. Participation is voluntary resulting in a potential selection bias. An experimental design with randomization of treatment and control villages was infeasible. Instead, propensity score matching to identify control villages matching Ishraq villages in terms of population size, poverty level and prevalence of girls' education. The evaluation method used is propensity score matching at the end of the program. Additionally, the IV method is used where the instrument is the distance to the youth center YC, where the program is housed, as it proxies cost of participation. A set of attitudinal and knowledge outcomes is used to measure the impact of Ishraq: (1) improvement in girls' functional literacy, (2) mobility and access to safe social spaces, (3) acquisition of life skills, including financial literacy skills, knowledge of hygiene, general health, puberty changes and reproductive health, and participation in sports, and (4) empowerment-related outcomes including attitudes toward gender roles and marriage, knowledge of women's rights and basic civic facts, attitudes toward FGM, self-esteem and participation in decision-making.

#### **024. Factors Affecting Family Life Education and Its Quality among Unmarried Women (15-24 years) in India**

*Garima Dutta, International Institute for Population Sciences (IIPS); Chander Shekhar, International Institute for Population Sciences (IIPS)*

In India, low female age at marriage, early childbearing initiation, high infant and maternal mortality are the major barriers in attaining the Millennium Development Goals. Thus, family life education (FLE) that includes basic understanding of human reproduction, sex education, contraceptive knowledge and women's rights is a necessary condition to meet the goals. This paper attempts to examine the level of FLE among unmarried women aged 15-24 and factors affecting its access and quality in India. The information available on FLE from 1,66,260 unmarried women (15-24) in the nationwide district level household survey (2007-08) have been analysed. The highest (62%) and the lowest (22%) prevalence of FLE are found to be in Karnataka and Bihar respectively. The minimum 10 years of formal education increases the odds of receiving FLE by six folds in India. Above half of the respondents reported that they felt embarrassed in the sessions of FLE irrespective to the sources (Government/other programmes, school teacher, others). Those who received FLE are rated significantly high on the index of contraceptive knowledge. Odds of sociodemographically poor women are appeared to be high to receive FLE from mother/sister-in-

law. Thus, this study also recommends to involving these stakeholders in the culturally suited community FLE programmes.

#### **024. Parents Speak: Fathers' and Mothers' Perspectives on Sex Education**

*Grace Cruz, University of the Philippines Population Institute; Christian Joy P Cruz, University of the Philippines Population Institute (uppi)*

A study of Filipino parents with adolescent children ages 10-19 in two areas in the Philippines reveal the overwhelming negative attitude towards sex education which may explain the low level of sex education both at home and in schools. Many parents who do not discuss these matters feel that their adolescent children are still too young for such topics. Other feel a great deal of discomfort discussing topics which to them are too vulgar and embarrassing to discuss particularly with their own children. Many parents distrust sex education in school and would prefer giving sex education to their adolescent children although some of them admit they are not equipped to handle such matters effectively. Findings also demonstrate the significant gap between the time when the children exhibit readiness to open discussions on matters relating to sex and the time when parents think it is appropriate to start such discussions to take place. The good news is that parents are open to future intervention such as training on parenting that will among others equip them with better skills on how to better handle their adolescents' sex education.

#### **025. Population—Family Structure and Buildings' Carbon Emissions in China**

*Zhou Wei, Zhejiang University; Mi Hong, Zhejiang University; JIA Ning, Zhejiang University; Sun Jing, Zhejiang University*

China's population structure is undergoing profound changes. Based on the simulation calculation in this paper, the average family scales decrease from 3.10 people in 2010 to 2.44 people in 2030. The number of people in 20-40yrs falls from 473 million to 356 million. And the urbanization rate will be decreasing to 64.1% from 49.95% in 2010. The changes in population structure play a significant role in building demand and relevant energy consumption. In 2010, the average residential area per person is 32.8 m<sup>2</sup>, which is close to the level of developed countries in Europe and Japan. If there is a balanced house ownership, present total residences can satisfy residents' demand. The current problem is there is great difference in house ownership and there is frequent demolition to increase GDP. If it would go in the current way, by 2030, the average residential area per person would exceed 55 square meters, which is over demand. What is more, the energy consumption of China's building life cycle will exceed the total social energy consumption in 2010, leading to serious energy waste and environmental pollution.

#### **025. Human Migration and Extreme Events: Tracing the Impacts of Environmental and Economic Shocks in the United States**

*Katherine Curtis, University of Wisconsin at Madison*

Current models of environment-population interactions are static, large scale, and fail to capture the relative importance of environmental events for human populations. To address these limitations, I analyze migration trends for selected US counties experiencing extreme environmental events and economic shocks. Using a unique data set that covers the 60-year period between 1950 and 2010, I focus on the overall magnitude and the age and race dimensions of migration "signatures" that characterize migration trends.

#### **025. Assessing changes in village-level social vulnerability based on census data**

*J. Andres F. Ignacio, University of Namur; Sabine JF Henry, University of Namur*

With the onset of climate change and its adverse effects, the focus on disaster risk reduction and management is increasing. Climate related extremes are on the rise and coupled with these are their escalating impacts on human populations. The measurement of vulnerability of populations

exposed to climate-amplified risk is increasingly becoming a priority in disaster risk reduction and management initiatives. This research develops a social vulnerability index which is applied on raw, disaggregated census data for the whole Philippines for the years 2000 and 2010. The effort is to determine trajectories of vulnerability between the two census years and examine the factors that affect decrease and increase in vulnerability. An analysis of the geographical distribution of changes in vulnerability status will provide an opportunity to assess the factors that contribute to these changes. Assessing changes in social vulnerability at the village level can help understand what particular factors affect the variability of social vulnerability over time. An understanding of these factors that positively and negatively influence vulnerability can contribute significantly to local development efforts and initiatives by targeting specific elements or aspects to help address the root causes of vulnerability.

### **025. Integrating Population into National Climate Change and Development Planning: The Cases of Malawi and Kenya**

*Clive Mutunga, Population Action International; Eliya Msiyaphazi Zulu, African Institute for Development Policy (AFIDEP); Roger-Mark De Souza, Population Action International; Ruth N Musila, African Institute for Development Policy (AFIDEP); James Ciera, African Institute for Development Policy (AFIDEP)*

Malawi and Kenya exhibit the challenges posed by climate change and population dynamics. Both countries experience high rates of population growth and rapidly rising urbanization, with large numbers of urban dwellers living in slums. Their agricultural-based economies are undermined by erratic climatic conditions and water scarcity problems, leading to food insecurity. These challenges are exacerbated by climate change. Given the strong links between population dynamics and climate change, addressing both issues using integrated responses would offer combined benefits. Key informant interviews conducted with stakeholders in both countries reveal a high level of awareness of the links, as well as the need for their integration. However, the issues are weakly linked at policy level, and programs to address them are implemented separately. This paper examines the challenges of integrating population into climate change and development planning, and identifies opportunities to enhance integration in the context of both countries.

### **026. Event-Centered Demographic Methods: Theory and Examples**

*José Antonio Ortega, Universidad de Salamanca, Spain*

New general event-centered demographic concepts are introduced that provide a generalization of reduced events and event-history methods that do not require the previous isolation of concurrent phenomena like mortality, fertility and migration, but are rather the result of their interaction. The basic concepts that apply to all event-centered measures are defined. Reduced-events combine the precise location of an event in a Lexis space, and a reduction factor against which the event is measured up. Different reduction factors lead to different indicators. Exposure-based reduction factors lead to standard demographic indicators such as age-specific rates or the TFR. Particularly interesting indicators result when the reduction factor is the birth cohort size. Period and cohort examples of reduced birth and death measures are provided, such as the Birth Replacement Sum or the Death Cohort. All the concepts are defined at the event level, and can be estimated from vital registration microdata, aggregate data or demographic survey microdata. The concepts are illustrated graphically using data from the Human Mortality and Human Fertility databases.

### **026. Hyak Mortality Monitoring System, Innovative Sampling and Estimation Methods - Proof of Concept by Simulation**

*Samuel Clark, University of Washington; Jon Wakefield, University of Washington; Tyler McCormick, University of Washington; Michelle Ross, University of Washington*

Traditional health statistics are derived from civil/vital registration. In low- to middle-income countries civil registration varies from partial coverage to nothing. We propose a new statistical framework for gathering health and population data - HYAK - that leverages the benefits of sampling and longitudinal, prospective surveillance to create a cheap, accurate, sustainable monitoring platform. HYAK has three fundamental components: 1. DATA MELDING: a sampling and surveillance component that organizes two data collection systems to work together: (1) data from health and demographic surveillance systems (HDSS) with frequent, intense, linked, prospective follow-up and (2) data from linked sample surveys conducted in large areas surrounding the HDSS sites using informed sampling so as to capture as many events as possible; 2. CAUSE OF DEATH: verbal autopsy to characterize the distribution of deaths by cause at the population level; and 3. SES: measurement of socioeconomic status in order to characterize poverty and wealth.

We conduct a simulation study of the informed sampling component of HYAK. Compared to traditionally cluster sampling, HYAK's informed sampling captures more deaths and produces estimates of both death counts and mortality rates that have lower variance and small bias.

#### **026. Modelling and decomposing vital rates: a non-parametric approach**

*Carlo Giovanni Camarda, Institut National d'Études Démographiques (INED); Paul H. C. Eilers, Erasmus Medical Center Rotterdam; Jutta Gampe, Max Planck Institute for Demographic Research*

Demographic events have characteristic age-specific patterns of occurrence. Finding model schedules to summarize the age-pattern of demographic rates has a long tradition, however, parametric models are predominantly used. Many demographic rates shows complex shape in their overall age-pattern. However such pattern can be attributed to different distinct components. While some of the components can be described by a parametric model, such as the Gompertz hazard for adult mortality, many others cannot. Additional complication arises if data are provided in age groups, which is still the case in many official statistics and historical data.

In the article we propose a model that allows to specify rates across a wide range of ages as the sum of several components, which are modelled on the log scale and are assumed to be smooth, but do not have to follow a particular parametric form. A penalized composite link model is used to decompose complex trajectories into smooth additive components.

Parametric and non-parametric forms can be used. Data can be given in age-groups which can eventually be of variable lengths. Furthermore, monotonicity or shape constraints on the components can be incorporated and the model can cope with two-dimensional settings in which age-patterns change over time.

#### **026. Reformulating the Support Ratio to Reflect Asset Income and Transfers**

*Ronald D. Lee, University of California, Berkeley; Andrew Mason, University of Hawaii At Manoa*

The support ratio is a simple and intuitive indicator of the consequences of population aging, and its changes are interpreted as implying corresponding changes in per capita age adjusted consumption. However, this holds only when net consumers rely on transfers from net producers. If instead they rely on asset income, then support ratio variations have no effect on per capita consumption if the economy is open, and likewise across golden rule economies with different population growth rates. Here we reformulate the support ratio to include both asset income and transfers. In countries in which the elderly are funded heavily by public transfers as in Sweden or Austria, the new measure gives the same result as the old one. In countries like the US or Mexico where old age consumption is funded more heavily out of asset income, the new measures suggest that the effects of population aging will be muted.

### **027. Household decision-making on obtaining maternal health care: a phenomenological study in Dhaka city, Bangladesh**

*Abu Hasanat Mohammad Kishowar Hossain, University of Dhaka*

Considering the achievement of Millennium Development Goals 5, the targets of Bangladesh is to reduce the maternal mortality rate into 143/100,000. At present, one third of pregnant women don't receive antenatal care. More than 70% of births took place at home. Only 29 percent of mothers receive postnatal care from a medically trained provider within 42 days after delivery. The aim of the study is to understand the barriers to household decision on obtaining maternal health care services. This is a qualitative study with phenomenological approach. The data collection process is guided through FGD, and in-depth interview. The findings show that careless about pregnancy, workload and the care of other children are viewed as reasons for poor adherence to ANC and delivery care. Mothers-in-law play an influential role in the uptake of ANC as well as delivery care in Bangladesh. Women prefer same sex health care professionals and there is no need to go for postnatal check-up when everything is normal. Decision-making is recognized as a complex process entwined with local belief systems and social relationships. Mothers, mothers-in-law, other female relatives, friends and neighbors are trustworthy sources of information in Bangladesh and play important role in decision making process.

### **027. Impact Evaluation of Maternal-Child Health and Family Planning Service Utilization in Uttar Pradesh, India**

*Chander Shekhar, International Institute for Population Sciences (IIPS); Diwakar Yadav, FHI 360, New Delhi, INDIA*

Using Propensity score matching, to assess the impact of antenatal care on subsequent maternal-child health care and contraceptive use, data from the third wave of cross-sectional District Level Household Survey (2007-08) and covered 76,147 currently married women aged 15-44 years of 70 administrative districts in Uttar Pradesh State of India. Result shows that the average effect of one service utilization (treatment) on next service utilization (outcome) is statistically significant and varies across the service utilization. It was found that institutional delivery has a high impact on post natal care services as well as contraceptive use. Average effect on contraceptive use of antenatal care and institutional delivery and postnatal care is much higher when women receive all three services (antenatal check-up, institutional delivery and post natal care). The study concludes that there is synergy across services, but its intensity remains low.

### **027. Maternal healthcare use and postpartum contraception in Nigeria**

*Ambrose Akinlo, Obafemi Awolowo University, Ile Ife; Luqman Bisiriyu, Obafemi Awolowo University, Ile Ife; Olapeju Esimai, Obafemi Awolowo University*

Family planning is generally acknowledged as an important component of the reproductive health agenda and a necessity in all programmes and policies geared towards the realisation of safe motherhood. Several studies have established that most maternal deaths occur in the postpartum period. This paper therefore aims to contribute to existing knowledge on the factors affecting the adoption of PFP, with special emphasis on examining how influential the women's contact with maternal health services (antenatal care, delivery in a health facility and postnatal care) had been on adoption of contraception in the postpartum period. The data comes from the 2008 Nigeria Demographic and Health Survey. The findings show that use of postnatal services, education, wealth status, residence and number of living children are significant predictors of postpartum family planning use.

### **028. A reversal in the population policy of Iran: Do curbing family planning programs raise low fertility?**

*Amir Erfani, Nipissing University, Canada*

Following a persistent low fertility rate in the country over the past decade, Iranian leaders recently proposed a shift from an anti- to a pro-natalist population policy. Consequently, conservative political and religious leaders suggested curbing the current family planning program, as a solution to raising the country's low fertility rate. Using data from two recent large-scale surveys of fertility and fertility intentions and decomposing the relative contributions of proximate determinants of fertility, this study aims to show that any limitations in the provision of family planning services will be unlikely to help increase the current low fertility rate for three main reasons: a high rate of marriage postponement, increasing male involvements in contraceptive use, and a wide spread of low fertility intentions. The study will also identify sub-groups of women who will face greater levels of unintended pregnancies and clandestine induced abortions, if the family planning services are limited. Finally, the new government's population program, known as "reproductive health", will be described and discussed.

### **028. Assessing efforts to reposition family planning in Francophone West Africa: methodology and common findings in eight countries**

*Nicole Ross Judice, Futures Group Global; Modibo Maïga, Futures Group; Elizabeth A McDavid, Futures Group; Elizabeth Snyder, Futures Group*

In response to demographic challenges and shifting public health priorities, many countries in sub-Saharan Africa, aided by international donors, have attempted in recent years to reposition family planning (RFP). However, the lack of a tool to assess progress has hindered their efforts. Recognizing this need, Futures Group participated in a collaborative project to develop a framework of indicators that assess change in the RFP environment. Since September 2011, Futures Group has applied the framework in eight countries in Francophone West Africa and is currently drafting individual country reports to describe the status of RFP as measured by these indicators. This paper outlines the process Futures Group used in the countries to gain acceptance of the framework: identifying key stakeholders from government, technical, and financial groups; nongovernmental organizations; and civil society and tapping their expertise through meetings and interviews. Countries are now able to assess progress toward RFP and have begun to see the need to incorporate policy indicators in their health information systems. The initiative suggests that the countries face similar challenges and can draw on some common actions to reposition family planning in order to meet women's unmet need for safe, effective, modern contraception.

### **028. Quality of Care in Family Planning: Gradual and Comprehensive Reform in China**

*Zhenming Xie, China Population Association*

Since the 1990s, many national population and family planning program have been under re-examination and reorientation in light of the Programme of Action adopted at the International Conference on Population and Development in 1994. This is the case in China. The present case study documents a program reform initiated by the State Family Planning Commission of China in 1995 to introduce the quality-of-care approach in a few counties and districts. The introduction of this approach, which focuses on the quality services and the client's choices in family planning/reproductive health at community level, was to serve as a means of reorienting the program away from its previous demographically driven track as well as scaling it up nationwide thereafter.

## **028. Shaping the Family: Contraception and Family Formation in Ghana and Mali as viewed through the Lens of the Capability Approach**

*Claudine Sauvain-Dugerdil, Université de Genève; Nedialka Douptcheva, Harvard School of Public Health; Sory Ibrahima Diawara, University of Bamako*

We apply here the capability framework developed by Amartya Sen to revisit the debate on the link between fertility and contraception and the domination in this respect of the “unmet needs” paradigm. Upstream from the demand for contraception what matters is whether a woman possesses the freedom to formulate a plan about having children, that is, the capacity to shape the contours of her family.

We use the most recent DHS from Ghana and Mali, two countries with different fertility levels but characterized, in both cases, by low contraception prevalence, and a large gap between the knowledge and use of modern contraception. We proceed using a three-step analysis. First, we examine the extent to which contraception knowledge opens up the opportunity to manage realized fertility through the use of contraception and, in this respect, how women differ from men. Second, we examine the characteristics of women who do not use contraception but have the intention of using it. Finally, we examine how women with distinct contraceptive behaviour have control over their pace of family formation as measured by their birth intervals. More generally, we discuss whether the dimension of individual control introduced by contraception has generated new inequalities.

## **029. Body weight perception and weight management behaviour among normal weight, overweight and obese women in India**

*Praween Kumar Agrawal, Population Council*

Paper examined self perception of body weight, future intention for weight management and actual weight management behaviour among normal, overweight and obese women in Urban India. 325 ever-married aged 20-54 years systematically selected from the second round of National Family Health Survey (NFHS-2, 1998-99) were re-interviewed after four years in 2003. Information on woman’s perception about their own weight, intention of weight management and actual weight management behaviour were collected through personal interview. Anthropometric measurements were obtained from women to compute their current body mass index. Discrepancy between self perceived body weight and women’s actual body weight was noticed. One-fourth overweight women and one in ten obese women perceived themselves as normal. Though a majority of overweight and obese women wanted to reduce their weight, a significant proportion of overweight (one in four) and 4% obese women also wanted to maintain their weight as it is. Only one in three overweight and one in four obese women were performing exercise to reduce their weight. These findings are important for public health interventions in obesity care in urban India.

## **029. Child Malnutrition in Rural India: Does Women’s Empowerment Reduce Prevalence of Stunted and Underweight Children?**

*Veena S. Kulkarni, Arkansas State University*

This study using nationally representative multiple data sources spanning the period between 1992-2006 investigates whether mother’s empowerment affects children’s nutritional status as measured by z scores on ‘weight for height’, ‘weight for age’ and ‘height for age’. Findings indicate differences in nutritional status by child’s gender, region, caste. Further, multivariate analyses show that relative bargaining index defined as the share of mother’s schooling years over father’s schooling years positively and significantly influence the short term measures of nutritional status of children, namely, z scores of ‘weight- for- age’ and ‘weight- for- height’. However, the estimates of quantile regression suggest that the bargaining power will improve the chronic measure of nutritional status, namely, ‘height for age’ at only the low end of conditional

distribution of z score. Additionally, access to health insurance programs and improvement in infrastructure and environment emerge as important factors in reducing child malnutrition.

### **029. Prevalence and variation of underweight and overweight among Vietnamese adults in Thai Nguyen province of Vietnam**

*Linh Thuy Dang, Institute of Population, Health and Development; Liem T Nguyen, Institute of Population, Health and Development*

Objective: This study aims to shed light on prevalence of underweight and overweight and its variations by socioeconomic factors in Thai Nguyen province of Vietnam. Method: A total of 2695 respondents were successfully completed the questionnaire. Both WHO cut-off points for Asian and Pacific (AP) and international classification for Body mass index were used. Statistical analysis was performed using Stata software with the svy procedure. Results: The prevalence of underweight is 20.1%, it is slightly but not significantly higher in females (21.2%) than males (18.9%). The prevalence of overweight in international and AP standards are 5.2% and 15.5% respectively. Again, no significant difference between males and females is found. There are no significant differences by ethnicity. People in middle aged have lowest risk of underweight and older people have greater risk of overweight than other. Higher income is associated with higher risk of overweight and lower income is associated with underweight. But this result is only significant in highest income group. Conclusion: People of middle age, living in city or town are at lower risk of underweight. Whereas, people who is older and richest has greater risk of overweight. Key words: underweight, overweight, Thai Nguyen, Vietnam

### **029. The Body Mass-Mortality Association in the United States: A Reassessment of Secular Trends**

*Yan Yu, Australian National University*

Three recent studies, all using the National Health and Nutrition Examination Surveys (NHANES), reached three different conclusions regarding the changing association between body mass index (BMI) and mortality in the US. This paper used the NHANES I and NHANES III data to examine mortality differences across BMI categories. The purpose is 1) to replicate previous analyses and reconcile discrepant findings in existing research and 2) to focus attention on variations across time periods and birth cohorts as well as variations across socio-demographic sub-populations. Preliminary results show that male and female BMI-related mortality differences are fairly similar in 1971-87, but diverge substantially afterwards. Relative to the normal-weight, mortality for almost all overweight and obese categories increases from 1971-87 to 1988-2006 among women. Relative mortality decreases over time among older men, but the decrease is substantial and significant for the class I obese only. These results caution against sweeping statements about BMI and mortality, and deserve the attention of those interested in the underlying mechanisms of the association and its implications for mortality trends.

### **030. Fertility of the North Korean Population: What Do We Know?**

*Doo-Sub Kim, Hanyang University*

The aim of this paper is to pull some of the threads together, with a focus on fertility of the North Korean Population, utilizing data from the 1993 and 2008 DPRK population censuses. This paper attempts to update our knowledge of the fertility trends in North Korea, and discuss their relative numerical importance in the overall demographic picture in the Korean Peninsula. Attention has been focused on estimating fertility levels, analyzing socioeconomic and regional differentials, and discussing factors contributing to the trends in fertility. Attempts are also made to address some of the issues that result from less reliable demographic data, and reconstruct fertility indicators from the census data. Another question to be examined is whether and to what extent fertility trends in

North Korea differ from those in South Korea. Finally, this paper ventures some comments on the implications of fertility trends in North Korea.

### **030. Population Distribution and Migration in the DPRK**

*John Zhongdong Ma, Hong Kong Univ. of Science and Technology*

Based on the report of census 2008 in the DPRK, we found that the population distribution is relatively even between the rural and urban areas (39.4% vs. 60.6%), among regions, and by size of localities. Under the planned economy, the mobility level is low, with an annual rate of cross-county migration at 6.3%, 7.5%, and 6.9%, respectively, for male, female and the whole population. Pyongyang is an exception with relatively high intercounty migration rate (17.1%). When age-specific migrates are calculated by sex, we found that the labor force peak is missing in the DPRK's migration schedule but a marriage peak for the females in the twenties, reflecting the lack of job opportunities and hence low labor migration rate, which is similar to the PRC in the early reform period in the middle 1980s. With respect to the choice of the destination of interprovincial migrants, the urban areas are favored, accounting for two-third of them. Three most preferred destinations include Pyongyang (36.1%), South Phyongan (20.0%) and Kangwon (9.0%), accounting totally three-fourth of migrants to the urban areas. As a result, the urban areas gain population in the urban-rural exchanges whereas Pyongyang and South Phyongan gain in the interregional exchanges from other provinces.

### **031. Living alone and psychological health in mid-life: the role of partnership history and parenthood status**

*Dieter Demey, ESRC Centre for Population Change; Ann Berrington, University of Southampton; Maria Evandrou, University of Southampton; Jane Cecelia Falkingham, University of Southampton*

This study investigates how the psychological health of British men and women living alone in mid-life is related to partnership history and parenthood status. Although living alone in mid-life is known to be associated with poor health, and despite the substantial rise in living alone in mid-life over time, little attention has been paid to the relationship between living alone and health in mid-life. Previous research has mainly focussed on health outcomes by marital status and partnership history, but has failed to take into account that those who are either single or living without a partner could be living in very different living arrangements. This study stresses that partnership and parenthood trajectories into living alone in mid-life are diverse and that these life course trajectories are in turn related to health. It uses data from Understanding Society to examine how psychological health in mid-life of those living alone in the United Kingdom is related to several partnership characteristics and the presence of non-residential children. Preliminary findings show that several aspects of partnership history matter for psychological health in mid-life and that the relation between parenthood status and psychological health is gender-specific.

### **031. Living arrangements and cognitive decline among the elderly in Europe**

*Silvia Meggiolaro, Department of Statistical Sciences, University of Padova, Italy; Stefano Mazzucco, University of Padova; Fausta Ongaro, Università Di Padova; Veronica Toffolutti, Norwich Medical School, University of East Anglia, UK*

Family ties may play an important role in the wellbeing of the elderly. In this paper, we examine the association between living arrangements and cognitive decline among people over 65 in some European countries, the hypothesis being that living with others (i.e. spouse or/and children) vis-à-vis living alone may have positive effects on maintaining cognitive functioning in comparison with living alone. To this end we used data from the first two waves of the Survey of Health, Ageing and Retirement in Europe (SHARE), which provides five indicators of cognitive functions: orientation, memory, recall, verbal fluency, and numeracy. Cognitive decline is measured by

considering the differences between the first and the second wave in each of these five indicators. Net of both the potential biases due to the selective attrition and the re-test effects, the evidence shows that the impact of living arrangement depends on either the country or the type of ability.

### **031. L'effet à long terme de la vie reproductive sur la mortalité des femmes en milieu rural sénégalais**

*Géraldine Duthé, Institut National d'Études Démographiques (INED); Valérie Delaunay, Institut de Recherche pour le Développement (IRD); Laetitia Douillot, Institut de Recherche pour le Développement (IRD); Gilles Pison, Institut National d'Études Démographiques (INED)*

En l'absence de données statistiques, la mortalité adulte est difficile à étudier en milieu rural africain. Sur le long terme, l'effet de la fécondité sur la santé des femmes après leur vie reproductive est complexe, faisant intervenir des facteurs biologiques et socioéconomiques qui peuvent être positifs ou négatifs. En milieu rural sénégalais, trois populations font l'objet d'un suivi démographique depuis plus de vingt ans, fournissant des données précises rendant possible d'étudier l'effet à long terme de la vie reproductive sur la mortalité des femmes. Dans cette communication, nous cherchons à identifier les caractéristiques de la vie féconde des femmes qui jouent sur leur risque de décéder une fois qu'elles ne sont plus en âge d'avoir d'enfants. La comparaison des résultats sur les trois populations nous permettra de voir s'il existe un schéma commun en milieu rural sénégalais ou si, au contraire, la relation entre la mortalité des femmes et leur fécondité passée dépend de spécificités locales.

### **031. Pathways from parenthood history to later life health: Results from analyses of the English Longitudinal Study of Ageing**

*Sanna Read, London School of Hygiene and Tropical Medicine (LSHTM); Emily M D Grundy, University of Cambridge*

We analysed the extent to which associations between parenthood histories and later life health are mediated by wealth, health-related behaviours, social support and strain. A sample of men and women aged 50+ who participated in the English Longitudinal Study of Ageing waves 1-3 was used (n = 6,207). Parenthood history included number of natural children, having adopted or step children and timing of first and last birth. Mediators were wealth, social support and strain, smoking and physical activity. Health outcomes were allostatic load and limiting long-term illness. The path models were adjusted for age, education, marital history, childhood health and intergenerational contacts. The association between a higher number of children and health was mediated by wealth in men and women, and by smoking and social strain in women. The association between having an adopted or step child and health was mediated through wealth. In addition to mediation through wealth, physical activity and smoking, mothers had a direct association between early childbirth and allostatic load. Among fathers, the direct paths from early and late childbirth to health remained, although some of the effects were mediated through wealth and physical activity.

### **041. Coping with complex individual histories: Comparing life course methods with an application to partnership transitions in Norway**

*Julia Mikolaj, University of Southampton; Mark J Lyons-Amos, University of Southampton*

As variation in the pattern of family life courses has increased over the past 50 years, the techniques available to analyse life course data have also expanded. While event history analysis is commonly applied, this is not always suitable, and more holistic approaches such as sequence analysis have been proposed as alternatives. As research tends to be interested in explaining more complexity in the family life course, it is necessary to extend our methodological toolkit by increasing the complexity of event history models (multistate event history models and simultaneous event history models) or applying other promising methods, such as sequence

analysis and latent class growth models. The aim of this paper is to compare and contrast simultaneous event history models, multistate models, sequence analysis, and latent class growth curve models to studying the family life course. The advantages and weaknesses of each of these methods are highlighted by applying them to the same empirical problem. Using data from the first wave of the Norwegian Generations and Gender Survey from 2007/2008 for women in birth cohorts 1945-1954, 1955-1964, and 1965-1974, we model changes in partnership status across the life course, with education as the primary covariate of interest.

#### **041. The Dataset project: Handling survey data in R**

*Emmanuel Rousseaux, University of Geneva; Danilo Bolano, University of Geneva; Gilbert Ritschard, University of Geneva*

Population studies strongly rely on survey data and much time is needed to prepare the data. Assigning comprehensible short and long labels renders outcome more directly usable, and producing a detailed summary informing about the distribution of the variables is essential for efficiently documenting the collected data. The Dataset project is intended to help the demographer or analyst in this task, allowing him to focus more quickly on the analysis. The toolbox come in the form of a series of R packages. It accepts user-defined missing values and then allows to easily turn a missing value as a valid case and vice-versa. It natively account for weights when available and process automatic checks to prevent the loss of representativeness when filtering out cases with missing values for example. As all information is stored within the data object a method for generating a codebook is provided. Furthermore, the toolbox provides efficient methods for handling panel data organized in successive waves. For example by specifying '.' in place of the two year digits in the variable names, the user can extract a whole sequence in a single step, recode some values, or turn a missing value into a valid case directly for all waves where the variable exists. In this paper we introduce some key fonctionnalités of our toolbox.

#### **041. The Role of Parental Social Class in the Transition to Adulthood: a Sequence Analysis Approach in Italy and the United States.**

*Maria Sironi, University Of Oxford; Nicola Barban, University Of Groningen; Roberto Impicciatore, Università degli Studi Di Milano*

In comparison to older cohorts, younger men and women in the developed societies delay their transition to adulthood and follow more complex trajectories. However, within cohorts there remain variations in timing and sequencing of events. Two of the major determinants of life course events related to transition to adulthood, and in particular family formation, are gender and social class. These two characteristics can influence the sequence of events characterizing the transition to adulthood in terms of socioeconomic inequalities through a different availability of opportunities for social mobility. Several studies show that in North America, a higher familiar status tends to decrease the complexity of trajectories or, in other words, to push towards a more “traditional” pattern, i.e. a trajectory in which the end of education and the first job precedes union formation, which in turn precedes parenthood. On the other hand, it has been highlighted that in Europe the familiar status has a different effect with an increasing complexity among higher status. The aim of the research is to examine in details the sequences of transitions highlighting, in a comparative perspective, how the life trajectories are influenced by parental social class and gender in the US and Italy.

#### **042. Fertility intentions of highly educated men and women and the rush hour of life**

*Buber-Ennsner Isabella, Wittgenstein Centre (IIASA, VID(OEAW, WU); Ralina Panova, Federal Institute for Population Research, Germany; Jürgen Dorbritz, Federal Institute for Population Research*

The life span between the mid-twenties and the late thirties is characterized by multiple demands, especially among highly educated persons and the expression “rush hour of life” has been used to describe periods when conflicting demands are felt most pressing. Based on the Generations and Gender Survey (GGS) we study fertility intentions of 2,200 university degree holders aged 28 to 40 years in West Germany, Austria, France, the Netherlands and Norway. We operationalize the rush hour of life by taking into consideration demographic characteristics and employment situation, combined with temporal aspects like duration of relationship and duration of current job. Analyses reveal that childbearing plans are most pronounced among university graduates around the age of thirty. Not only the degree of institutionalization but also the duration of the relationship is associated with fertility intentions. Employment characteristics like amount of working hours, recent change of job, type of contract and satisfaction with job security are related to childbearing plans with remarkable gender differences. We conclude that especially highly educated women in the early thirties need to be supported at the institutional level, but also at the societal level to realize their intentions.

#### **042. The Educational Gradient of Low Fertility in Latin America**

*Eduardo L. G. Rios-Neto, CEDEPLAR - Universidade Federal de Minas Gerais; Raquel Guimarães, Centro de Desenvolvimento e Planejamento Regional (CEDEPLAR)*

This paper evaluates fertility changes, controlling for education, in five Latin American countries that have completed or are in the later stages of demographic transition. This study aims to assess the chances that some countries in the region will reach low or lowest-low fertility levels in the near future. The authors performed two decomposition exercises. First, a retrospective decomposition exercise evaluated the impact of changes in women’s educational composition and in the age-specific fertility rates (ASFR) on the observed decline in total fertility rates (TFR) between 2000 and 2010. Next, a prospective decomposition projects future educational composition and evaluated the expected decline in TFR if the series of ASFR are kept constant at the 2010 level. These exercises were applied to Brazil, Mexico, Argentina, Uruguay, and Colombia using IPUMS microdata (Minnesota Population Center 2012).

#### **042. The impact of schooling on teenage fertility, age at marriage and contraception use: Evidence from compulsory education in Peru**

*Ana Mylena Aguilar Rivera, The World Bank*

This paper uses Peru DHS from 2008-2010 and birth cohorts (1970-1988) to estimate the effect of female education on teen fertility. It also estimates the role of education on two intermediate variables: age at marriage and current use of contraception. The analysis exploits an exogenous change in education produced by increased length of compulsory education in Peru from 6 to 11 years in 1994

The results show that a change in compulsory education is positively associated with formal schooling attained. The instrumental variable (IV) estimates show a statistically significant effect on reducing the probability of having a first birth between 18 and 19 years, which is post-compulsory education age, but not between 15 and 17 years. Results also indicate that better educated women are less likely to marry before 20 years of age and significantly more likely to use contraception. The IV estimates are larger than the (OLS) on the three outcomes studied suggesting the possibility of heterogeneous effects of the educational reform and measurement error on schooling. Results are relevant for policymakers aiming to reduce teenage fertility and increase educational attainment.

#### **042. Varying effect of educational attainment on second births in 28 European countries**

*Martin Klesment, Estonian Institute for Population Studies, Tallinn University; Allan Puur, Tallinn University*

We study the variation of second birth intensity in 28 European countries, focusing on the effect of educational attainment. Previous research has suggested that in some countries higher educational attainment of a woman has a positive effect on second birth intensity. We hypothesise that geographical variations in the overall propensity to have a second child and the educational gradient are related, having common roots in contextual features supporting the reconciliation of work and family life. This relationship is analysed using the data from the survey of income and living conditions in Europe (EU-SILC wave 2005 and 2009). We use multilevel event history modelling that allows country-level random effects for educational attainment. The results show considerable variation in second birth intensity among the observed countries while the overall effect of higher education appears positive on the second births. Country-level variance of second birth intensity is negatively correlated with the random effect of lower educational attainment and positively with the effect of higher education. The results corroborate the division of countries according to education's effect and support the inclusion of country-level contextual variables to explain the cross-country differences.

#### **043. Le profil par sexe et âge de la mortalité violente dans les conflits récents**

*Christophe Bergouignan, Université Montesquieu-Bordeaux IV; Khalid Eljim, Université Montesquieu, Bordeaux IV; Claire Kersuzan, Université Montesquieu - Bordeaux IV; Paskall Genevois-Malherbe, Université Montesquieu - Bordeaux IV*

Les guerres européennes du 19<sup>ème</sup> siècle et la 1<sup>ère</sup> guerre mondiale présentent des profils de mortalité très spécifiques, ciblant surtout les jeunes hommes adultes. Certaines guerres plus récentes (Burundi, Kosovo, Rwanda), montrent au contraire un profil de la mortalité par sexe et âge, directement liée au conflit, radicalement différent. Ainsi, loin d'être épargnées, les femmes sont touchées avec une intensité loin d'être négligeable, parfois proche de celle avec laquelle les hommes sont frappés. Par ailleurs, les taux de mortalité imputable aux violences augmentent régulièrement avec l'âge, en particulier chez les femmes, mais aussi pour les hommes. Cette communication se propose d'examiner 3 aspects associés à cette situation. Tout d'abord, on cherchera à quel point, ce profil par sexe et âge de la mortalité violente se retrouve dans d'autres conflits récents. Ensuite, on tentera de savoir si les pays concernés ont connu, dans leur histoire passée, des formes de violence, parfois plus ponctuelle, de nature à laisser imaginer une telle évolution. Enfin, on tentera de comprendre les facteurs plus contemporains qui ont conduit à observer ces profils par sexe et âge de mortalité de guerre. On cherchera notamment, quand c'est possible (Burundi, Kosovo), à mesurer le rôle de la mobilité, dans la capacité à échapper à la violence.

#### **043. The D R Congo conflict (1998-2004): Assessing excess deaths based on war and non-war scenarios**

*Richard Kapend, University of Southampton; Andy Hinde, University of Southampton; Jakub Bijak, University of Southampton*

To assess excess deaths linked to the 1998-2004 armed conflicts in the Democratic Republic of Congo, the International Rescue Committee conducted a series of five surveys over a seven years period (2000–2007). IRC estimated excess deaths of 5.4 million between 1998 and 2007. Using an alternative method this study combines four different data sources – 1984 DRC Population Census; 1995 and 2001 Multiple Indicator Cluster Surveys and the 2007 Demographic and Health Survey – to assess excess population loss. Indirect techniques are used to derive estimates and cohort component projections conducted for factual and counter-factual scenarios using varying

assumptions to estimate excess population loss. This study's excess population loss is estimated at 2.4 million for a closed population; 1.7 million when migration data is incorporated. We also find that the choice of mortality baseline determines the level of excess population loss. Mortality is exceptionally high in the DRC regardless of baseline or assumptions used. Further works are ongoing to refine assumptions and assess competing causes of mortality as well as the extent of uncertainty linked to both this study's model and components of population change.

#### **043. The Stagnation of the Mexican Life Expectancy in the First Decade of the Twenty First Century: The Impact of Violent Deaths.**

*Vladimir Canudas-Romo, University of Southern Denmark; Víctor Manuel García-Guerrero, El Colegio de Mexico, Mexico*

In the first decade of the twenty first century the Mexican life expectancy changed from a long trend of increase to stagnation. These changes concur with an increase in deaths by homicides that the country experienced in that decade. There are 138,461 official reported deaths by homicide in the period of 2000 to 2010. However, the time trend shows an increase in the counts of homicides in the later years from an annual number of 10,000 to 25,000 deaths in 2010. We quantify the impact of these changes in homicides and other causes of death in life expectancy. The changes in the age-patterns of the life table functions are also studied. Our preliminary results show that the male life expectancy remained around the value of 72 years from 2000 to 2010. However, the apparent stagnation in life expectancy is resultant of increase in homicides and diabetes deaths on one hand, and the positive improvements observed in other causes of death on the other. The negative impact of homicides is particularly observed at ages 15 and 50, and diabetes for ages 45 and more, and they account for almost an entire year of the male life expectancy. Mexican males would have observed a 2 years increase in life expectancy if homicides and diabetes deaths had been avoided.

#### **043. War biographies: Human rights violations during the 1991-2002 Sierra Leone civil conflict**

*Amie Kamanda, University of Southampton; Jakub Bijak, University of Southampton; Sabu Padmadas, University of Southampton*

Documenting the effects of conflict is impeded by data unavailability. Utilising data with retrospective questions addresses this challenge since it generates quasi-longitudinal information. Individual testimonies collected by Truth and Reconciliation Commissions (TRC) established in South Africa and Sierra Leone are characteristic of these types of data because they enable victims to retrospectively recount human rights abuses. The 2004 Sierra Leone TRC dataset exemplifies a unique human rights data, enabling researchers to document the effects of the Sierra Leone civil war, 1991-2002. The data emanated from testimonies by 7,706 Sierra Leoneans. It is a human rights database with seventeen categories of violations summarised to: killing, forced displacement, destruction of property, sexual violence, physical abuse, arbitrary detention, forced imprisonment and pillaging. Quantification of the testimonies resulted in 40,242 violations records. This study documents the effects of the conflict through geospatial mapping of violations at different administrative levels. The analysis is important because the effects of conflict are asymmetrically distributed across the regions affected. This paper asserts that regional differences in human rights violations underlie these variations in the post-war population distribution.

#### **044. Deuxième transition démographique au Cameroun : Dynamique de l'union libre et impact sur les caractéristiques démographiques et sociales de la population**

*Lucile Djianou Kamga, Bureau Central Des Recensements Et Des Etudes De Population*

Les données issues des Recensements Généraux de la Population et des Enquêtes Démographiques et de Santé (EDS) menés au Cameroun permettent de déterminer les intrants de la dynamique

matrimoniale, mettent en lumière les changements survenus dans les différentes unions conjugales, et rendent compte de l'ampleur de l'union libre. Tout en mettant en lumière les influences réciproques entre les variables socio démographiques et l'évolution de l'union libre, l'étude saisit, au moyen de l'âge moyen à la première union libre, les nouvelles formes de l'union libre. Enfin, l'étude met en évidence la vulnérabilité des femmes et des enfants résidant dans les ménages formés par des couples vivant en union libre, dans un contexte de pauvreté marqué en milieu urbain par le chômage et la prostitution grandissants et en milieu rural, par la recrudescence de la polygamie et des mariages précoces.

#### **044. Family formation in Uruguay: pre-marriage cohabitation, cohabiting unions and marriage**

*Wanda Cabella, Facultad de Ciencias Sociales, Universidad de La República; Mariana Fernández Soto, Facultad de Ciencias Sociales-Universidad de la República*

The objective of this work is to study the factors that affect the decision to enter into cohabitation or marriage in the first union among Uruguayan women, in the framework of a significant increase in consensual unions in Uruguay during the last two decades. This work aims at contributing to a better understanding of the determining factors that underlie the choice of one or other type of union among women who enter into first unions, and in particular to understand the interaction of structural and value-related factors. For this purpose, we have analyzed the form of entry into first unions using proportional risk models and taking into consideration three groups of variables: structural, background, and variables related to values and attitudes. We expect to find differences in the choice of union type and, in particular, of the time of transitioning into marriage, based on social strata and values.

#### **044. To cohabit or to marry? Insights from focus group research in 9 countries in Europe and Australia**

*Brienna Perelli-Harris, University of Southampton; Daniele Vignoli, University of Florence; Ann Berrington, University of Southampton; Olga G. Isupova, Higher School of Economics, Moscow; Ann Evans, Australian National University; Trude Lappégard, Statistics Norway; Monika Mynarska, Institute of Psychology, Cardinal Stefan Wyszyński University in Warsaw; Andreas Klaerner, University of Rostock; Katrin Fliegenschnee, Vienna Institute of Demography; Renske Keizer, Netherlands Interdisciplinary demographic Institute*

Across the industrialized world, more and more couples are living together without being married. Although researchers have studied the increase in cohabitation using quantitative data, few have investigated this phenomenon using qualitative data. In this study, we use focus group research to compare the meaning of cohabitation and marriage in Australia and nine countries in Europe. Collaborators conducted eight focus groups in each country, coded each discussion, and produced a standardized country report. We are now analyzing this data to compare results across countries. We examine themes such as the advantages and disadvantages of cohabitation and marriage, barriers and motivations to marry, and the appropriate life stages to marry. We also examine the role of children and policies in potentially prompting marriage, as well as perceptions about the future of marriage. The comparative nature of this research highlights similarities and differences across societies and draws out country-specific distinctions. In addition, because we have stratified the groups by gender and education, we can better understand within-country heterogeneity and look for parallels in group responses across countries. Taken as a whole, this study illuminates how cultures shape decision-making processes fundamental to partnership formation.

#### **044. Understanding the Continuity and Change of Cohabitation in Mexico: Same as Before or Different Anew?**

*Julieta Perez Amador, El Colegio De Mexico*

A recent boom in cohabitation in Mexico has sparked a debate about whether it is a new form or a renaissance of the old. To be clear, the characterization of the old form of cohabitation focuses mostly about who cohabits and who does not (i.e., the low educated, etc.), but says little about its duration or dissolution via marriage and separation. Regrettably, claims of a new form of cohabitation are meted out without a thorough examination of cohabitation as a process. Therefore, I propose to establish a more accurate baseline using a multi-state transition formulation. Using data from two nationally representative surveys, this paper investigates the dynamism surrounding cohabitation as a status in matrix of possibilities, which is yet to be well understood. The current project contributes towards better understanding of the changing demographics of cohabitation in Mexico, and the nature and meaning of cohabitation around the world.

#### **045. Debt as Entrapment or Strategy?: Livelihood Strategies and Patterns of Remittance Use amongst Transnational Families in Thailand**

*Brenda SA Yeoh, Asia Research Institute; Grace HY Baey, Asia Research Institute; Dhiman Das, Asia Research Institute; Aree Jampaklay, Mahidol University*

Whilst studies have shown that migration is often undertaken as a livelihood strategy amongst transnational families in Southeast Asia, little has been explored concerning the role and implications of debt on patterns of everyday remittance use. Drawing on qualitative and quantitative data from the CHAMPSEA (Child Health and Migrant Parents in Southeast Asia) study in Thailand, this paper seeks to unpack the relationship between debt, remittance use, and migration as a strategy of poverty alleviation. Although the results from our quantitative survey indicated that a significant proportion of actual remittance use planned for other uses such as children's education, house building or subsistence needs was diverted towards debt repayment, a closer look at the qualitative data revealed a more complicated picture concerning the nature of debt in two distinct but overlapping ways: debt as entrapment (whereby debt is perpetuated as a vicious cycle of poverty); and debt as strategy (whereby the family undertakes deliberate decisions to purchase material investments through instalment loans). These findings emphasise the complex nature of migration, whilst highlighting the need for studies on migration and development to incorporate a more nuanced understanding of debt concerning household decision-making practices and remittance use.

#### **045. Long-term determinants of Latin American migration. A macro panel study for the period 1975-2010**

*Victoria Prieto, Universidad de la Republica; Joaquin Recaño-Valverde, Universitat Autònoma de Barcelona*

Latin American and The Caribbean outmigration coincided with the onset of the Demographic Transition for some countries, but little is known on how both processes are related. To what extent natural growth did contribute in explaining net migration's trend? What other processes could have inhibited its impact on international mobility?

Country level data from UN Population Division, World Bank and the Quality of Governance Institute was organized into a macro-panel, where 16 countries were followed up from 1975 to 2010. A multivariate linear model with fixed effects and interactions, to account for demographic inhibitors, such as urbanization, industrialization or increase in productivity, was estimated. Similar to what has been found for the Trans-Saharan migration system, natural increase has a negative and significant effect on net migration's evolution, even while other processes are going on. Urbanization significantly inhibited the effect of natural increase on net migration, up to four times, but this was not the case for productivity increase or for industrialization.

#### **045. Race, Religion and Skilled Labour Immigration: The Case of Malaysia**

*Tan Chuie Hong, Multimedia University*

There have been a number of studies on microeconomic and macroeconomic determinants of migration, but few discussed on the race and religion factors on skilled labour immigration. This paper makes contribution toward filling this void by examining how religion influences the skilled labour immigration flow into Malaysia. Specifically, the sharing of religious cultures enables the formation of exchange networks that can overcome the failure or non-existence of the social and economic institutions for affecting the flow of skilled labours into Malaysia. The determinants of immigration are analysed with pooled cross-country and time series data on skilled immigration into Malaysia from 39 countries during 1998-2004. Results demonstrate clearly the sharing of Muslim, Buddhist and Hindu culture by three major races which are the Malays, Chinese and Indians in Malaysia has a significantly positive influence on the inflow of skilled labour immigrants.

#### **045. The same but different? A cross-national comparison of internal and international migration aspirations.**

*Evelyn Ersanilli, University Of Oxford; Jorgen Carling, Peace Research Institute Oslo; Hein De Haas, International Migration Institute University of Oxford*

This paper explores the relationship between internal and international migration aspirations. Studies have indicated that there is partial overlap between these flows with internal migration preceding or following international migration. However internal migration is much more common than international migration. How come? Some studies have shown that internal and international migrants have different socio-economic profiles. This paper aims to shed light on the background to these differences; are they being driven by the higher financial costs of international migration, differences in expected returns or other factors. More specifically the paper looks at the role of household wealth, education, internal and international migration experience, networks, and internal and international remittances on generating internal and international migration aspirations. The analysis draws on data from the EUMAGINE project conducted in a total of sixteen research areas of Morocco, Turkey, Senegal and the Ukraine. The research areas vary in the size of internal and international migration flows. One research area in each country is a city that is a popular destination for internal migrants. This variation facilitates distinguishing effects of local migration cultures from the role of personal characteristics of prospective emigrants.

#### **046. Using census data to estimate old-age mortality for developing countries**

*Nan Li, United Nations Population Division; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section)*

Old-age mortality accounts for large fractions of death. Yet for many developing countries, old-age mortality are often only referred by model life tables using mortality data at young ages, or sometimes at young and adult ages; and reliable estimates of old-age mortality using data collected from old-age population can hardly be found. Based on the fact that migration is rare and death risk is high at old ages, this paper proposed a method, namely the Census method, to estimate old-age mortality, using census data on old-age population. The Census method aims to eliminate the effects of age-reporting errors, and is composed of three models. The first model is the variable-r method that converts the census populations into the person-years of the underlying stationary population. The second is an adjustment model, which uses a common relationship between the survival ratios that is found in model life tables to eliminate the effects of age-reporting errors in censuses. And the third is the extended Gompertz model, which estimates the number of survivors at exact ages of the underlying stationary population based on the commonly observed mortality pattern. Examples are provided using census data from developing countries in Africa and Asia.

#### **046. Estimating age specific mortality: a new model life table system with flexible standard mortality schedules**

*Haidong Wang, Univeristy of Washington; Alan D Lopez, University of Queensland; Christopher Murray, University of Washington*

In this paper, we propose a new model life table system that is parsimonious and adequately captures the range of age patterns of mortality observed in real populations and yield high predictive validity, not just measured by summary indices such as life expectancy at birth, but more importantly by age specific mortality rates. It provides satisfactory estimates of age specific mortality for countries with high levels of mortality, especially those plagued by the HIV/AIDS epidemic. Finally, this new model could generate age specific mortality with a plausible time trend.

#### **046. Levels, Patterns and Trends of Male Fertility in Sub-Saharan Africa. What can we learn from Demographic and Health Surveys?**

*Bruno Schoumaker, Université Catholique de Louvain*

Levels, patterns and trends of male fertility are little documented in sub-Saharan Africa. Most existing studies have been conducted at the local level, and are relatively old. Yet, data collected in DHS contain valuable information on male fertility, and have largely been untapped. The objectives of this paper are (1) to evaluate to what extent the DHS data in sub-Saharan Africa can be used to measure levels, patterns and trends of male fertility, and (2) to provide a broad overview of male fertility levels, patterns and trends in Africa. Three methods are compared: the own children method, the crisscross method, and the date of last birth method. Results suggest that the own children method is the most appropriate to measure male fertility in a wide range of countries and periods. Preliminary results show three broad patterns of male fertility. They also show declines in male fertility in several sub-Saharan African countries.

#### **046. The own-children estimates of fertility applied to the 2011 Iran Census and the 2010 Iran-MIDHS: An evaluation**

*Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University; Meimanat Hossein Chavoshi, Australian National University; Banihashemi Faribasadat, ; Ardashir Khosravi, Iran Ministry of Health*

The own-children method is a reverse-survival technique to estimate fertility measures using census or survey data. Although the method has been developed in the 1960s, it is still a useful method for analysing fertility measures as it provides single-year estimates of fertility for 15 years prior to a census. This paper presents the fertility trends in Iran during 1997 and 2011 derived from the 2010 IrMIDHS and the 2011 Census, and examines the validity of the own-children method of fertility estimates by such characteristics as province of residence, religion, nationality and education. The results will be assessed by a detailed investigation of mortality assumptions, the presence of non-own children, and age misreporting. ASFRS and TFRs are estimated for Iran by province, religion, and nationality (Iranians, Afghans, Iraqis and others), as well as different levels of education for the period 1997-2010. The fertility estimates obtained alternatively from two matching procedures (using relationship to head of household and mothers' line number) are investigated to see the accuracy of the results. The OCM estimates are also compared with those obtained from other direct and indirect methods. Implications for the improvement of census data for applying the own-children method are discussed.

#### **047. Children, adults and the elderly in the Great Recession: an economic atlas of the US by age**

*Gretchen S Donehower, University of California, Berkeley*

The United States is still in the midst of the worst economic climate since the Great Depression. Impacts have not been uniform across demographic groups, however, with important differences by age. While there is much research already about the age impacts of the Great Recession, it largely focuses on just one particular age group or just one aspect of economic life. To get a complete understanding of the generational nature of the Great Recession requires more comprehensive tools. The National Transfer Accounts (NTA) framework provides a more complete perspective, allowing us to examine the age dimension of production, consumption, transfers, and saving. In this paper, I will show age profiles of all of these economic activities for the full age range, from pre-recession years through 2011. The results indicate that all ages have been hurt by the recession, but to different degrees. The coping mechanisms employed to deal with these difficulties have also varied significantly by age and socioeconomic status.

#### **047. Evolution of economic transfers between age groups before the crisis in Spain (2000-2008): who were the losers and winners from the pre-crisis “euphoria”?**

*Concepció Patxot, Universitat de Barcelona; Elisenda Rentería, Universitat de Barcelona; Guadalupe Souto, Universitat Autònoma de Barcelona*

There is a general perception that before the crisis there was a waste of money by the government and the families in Spain. It is important, then, to analyze if this misspending was made equally among age groups and to what extent it was due to the government or to families. This will have very different implications on the restructuring of the transfers system, which seems to be one of the main current concerns of governments. We propose here to analyze the evolution of lifecycle deficit and their related age reallocations profiles (transfers and asset-based) from 2000 to 2008 for Spain using National Transfers Accounts methodology. The aggregates show that the lifecycle deficit increased a 52%, meaning that consumption increased more rapidly than labor income. This implies that the necessity to finance consumption through age reallocations increased highly in few years. This tendency has been accompanied by an increase of the public share in the total consumption of the economy, growing from 25% in 2000 to 28% in 2008. This work aims to shed some light on how these changes have occurred by age, showing which age groups have benefit more or can be more affected by changes in the transfer system due to the crisis.

#### **047. Care for money? - Mortality improvements, increasing intergenerational transfers and time use for the elderly.**

*Tobias C Vogt, Max Planck Institute for Demographic Research (MPIDR); Fanny Kluge, Max Planck Institute for Demographic Research*

Background: After German reunification mortality among older East Germans converged quickly to the West German level. Simultaneously, they witnessed an 10-fold rise in pension benefits.

Objective: By using this natural experiment, we seek to show, first, that increasing financial transfers from the elderly to their children led to increasing reverse transfers in form of care and, second, that this rise in hours spent for care led to a reduction in old age mortality.

Method: We use poisson regression to test whether rising pensions led to an increase of hours spend on care and if this increase led to a reduction in old age mortality. We use data from the German Pension Fund and data on time use from the NTA project.

Preliminary Results: Our first results reveal that since German reunification intergenerational downward transfers more than doubled. This is caused by the immense increase in pension benefits since the Fall of the Berlin Wall. At the same time, mortality for pensioners dropped markedly and converged to the West German level.

**047. To give or not to give a bequest: Bequest estimate and wealth impact based on a CGE model with realistic demography in Japan**

*Miguel Sanchez Romero, Max Planck Institute for Demographic Research (MPIDR); Naohiro Ogawa, Nihon University; Rikiya Matsukura, Nihon University*

Historically, economic development in most countries has been accompanied by declines in total fertility rates, increases in life expectancy, especially at older ages, and population aging. Together these changes tend to affect a country's economic growth, saving rates, and worker productivity. Japan is an interesting and special case because the population aging there has been the fastest in the world. Furthermore, in Japan, which is comparatively advanced in terms of policies regarding population aging, the economic impact of bequest wealth has been drawing a tremendous amount of attention. And yet, despite that, no official statistics on bequests exist regarding how much bequest is being generated, or how big an impact they have on the economy, have been undertaken. Our study aims to fill this gap by offering an estimate of bequests in Japan from 1885 to 2100, based on the computed results obtained through NTA research. Specifically, we create a model of the mechanism of how bequests are generated due to the influence of a real-life population structure, and by transforming the age profiles of labor income and consumption derived from NTA, we estimate how bequests are generated in a population in which consumption/saving, labor supply, the timing of death and generation size change.

**048. Background Risk of Food Insecurity and Insurance Behaviour: Evidence from the West Bank**

*Luca Pieroni, University of Perugia*

This paper explores behavioural changes resulting from the presence of a background risk. Due to markets incompleteness, not all risks are insurable. The literature suggests that, according to the structure of preferences, agents bearing a background uninsurable risk are less willing to bear other insurable risks and increase their demand for insurance. The empirical evidence of this effect is limited and, despite the relevance of this question, unexplored in developing countries. This paper fills this gap. It explores the effect of a background risk on the decision to buy health insurance using household data from the Palestinian Territories. We consider the risk of food insecurity as a background uninsurable risk. Using a bivariate probit model, we find that the propensity to buy health insurance is positively affected by the presence of a background risk of food insecurity. When allowing the background risk to vary in intensity, we find that the propensity to insure is higher as the background risk becomes more intense. These results are robust to alternative indicators of background risk. The study shows that, in presence of background risks, there might be incentive changes towards the desirability of insurance that have implications for policy design.

**048. Genre et grande pauvreté au Maroc**

*Mohamed Sebti, Université Cadi Ayyad de Marrakech; Patrick Festy, Institut National d'Études Démographiques (INED)*

Dans la société marocaine, les rôles et les responsabilités liés au genre sont définis et réalisés à travers le mariage. Par référence au Coran, l'homme doit subvenir aux besoins économiques du ménage. En échange, sa femme doit lui obéir (le principe du ta'a) et on s'attend à ce qu'elle soit femme d'intérieur, mère, sœur, épouse et gestionnaire des finances. Traditionnellement, les hommes sont responsables de tout hors du foyer et les femmes de tout dans celui-ci. Cette forte différenciation des rôles laisse présager une perception également différenciée de la notion de pauvreté, les hommes mettant en avant les obstacles rencontrés dans la recherche de revenus, les femmes s'attachant davantage à leurs conditions d'existence, inévitablement domestiques. On prévoit aussi que les réseaux de solidarité décrits comme un recours éventuel soient eux-mêmes marqués par le genre, les femmes étant cantonnées à des relations avec des personnes de même sexe. Nous vérifions ces hypothèses en interrogeant (entretiens semi-dirigés) hommes et femmes

sur leur perception de la pauvreté et de leur condition propre, ainsi que sur leurs stratégies de survie face à leurs graves difficultés. Les enquêtés vivent dans Marrakech et sa région. On distingue médina urbaine, zones rurales de plaine et de montagne.

#### **048. Health Card and Health Care Facilities Demand Among the Indonesian Elderly**

*Maliki Maliki, National Development Planning Agency*

This paper evaluates the health card subsidy, issued by Indonesian government after the financial crisis in 1997, benefits the elderly health care demand. The health card subsidy provided free access to health services; and was accepted at all health center or 'puskesmas'. Using the Indonesia Socio-economic survey data (Susenas) for 2003, our results show health cards issued to the poor consistently caused increase the demand on health care facilities among the 55 year old population. Unfortunately, it is also found that the health card benefited wealthier individuals in their access of health centers or 'puskesmas'.

#### **049. Determinants of Adolescent Vulnerability to Early Marriage and Early Sexual Debut in the Context of HIV and AIDS**

*Priscilla Atwani Idele, UNICEF; Livia Montana, University of North Carolina at Chapel Hill; Chiho Suzuki, United Nations Children's Fund (UNICEF); Rachel Yates, UNICEF NY; Patricia Lim Ah Ken, UNICEF NY; Turgay Ünal, UNICEF; Luong Y Nguyen, UNICEF NY; Attila Hancioglu, UNICEF NY*

Although orphanhood and co-residence with chronically ill or HIV-positive adult are frequently used as proxy markers of vulnerability for children under age 18 affected by HIV/AIDS, evidence shows these are not robust measures of child vulnerability across national and epidemic contexts (Akwara et al, 2010). Data from 11 nationally representative household surveys were analyzed using multivariate methods to establish if these markers consistently identified adolescents age 15-17 with worse outcomes, net of other socio-demographic factors. Data were pooled for 11 countries, and separate logistic regression models were fitted to assess the strength of associations between each of the outcomes and the analytical variables. The current analysis focuses on the following outcomes: early marriage (age 15-17); and early sexual debut (age 15-17). The results indicate that orphanhood, child's living arrangement, household wealth, and adult education are associated with the selected outcomes in adolescents. The presence of chronically ill adult in the household almost made no difference in odds of poor outcomes, after controlling for other analytical variables. The results of the analysis contributed to the redefinition of vulnerable children including adolescents in the context of HIV/AIDS and change in policy and programming guidance.

#### **049. Self-reported reproductive tract infections and Treatment Seeking Behaviour among Married Adolescent Women in India**

*Ranjan Kumar Prusty, International Institute for Population Sciences (IIPS); Sayeed Unisa, International Institute for Population Sciences (IIPS)*

Around 151 million cases of curable STIs are found in south and south-east Asia out of 340 million cases globally. India is home to the highest number of adolescents in the world who suffers from lack the knowledge and power they need to make informed sexual and reproductive health choices. The present paper tries to understand prevalence of reproductive tract infection and sexually transmitted infection (RTI/STI) and treatment seeking behavior among married adolescent women aged 15-19 years in India using District Level Household (DLHS, 2007-08) data. Around 15 percent of women reported to have any symptoms of RTI/STI. Main symptom reported by adolescent women is low backache, pain in the lower abdomen, pain during intercourse and itching or irritation over vulva. Factors analysis shows the concentration of diseases in three clusters - infection in around the vulva, other reproductive infection and abnormal

discharge; and intercourse related problems. Major predictors of both symptoms of reproductive infections and treatment seeking behavior from multivariate analysis are age, education, wealth, region and awareness about RTI/STI. Awareness about the transmission of RTIs/STIs is low among adolescents. Hence, it is important to have proper knowledge about RTI/STI among adolescents.

#### **049. Socioeconomic Disparities in Maternity Care among Indian Adolescents, 1990-2006**

*Lucky Singh, International Institute for Population Sciences (IIPS); Chandan Kumar, Indian Institute of Technology Roorkee; Prashant Singh, International Institute for Population Sciences (IIPS); Rajesh Kumar Rai, Tata Institute of Social Sciences (TISS)*

India accounts for the highest number of maternal deaths (2010) in the world suggesting poor utilization of maternal health care services. The proportion of adolescent deaths (due to pregnancy or during childbirth) to total maternal mortality is high as well. This paper assesses the socioeconomic differentials in accessing full antenatal care (ANC) and professional attendance at delivery (PAD) by adolescent mothers in India during 1990-2006. Data from the three rounds of the National Family Health Survey of India conducted during 1992-93, 1998-99 and 2005-06 were analyzed. The Cochran-Armitage and  $\chi^2$  tests were applied to examine the trend in proportion. Using pooled multivariate logistic regression model, and adjusting for potential socio-demographic and economic characteristics, the likelihood of adolescent women accessing full ANC increased by only 4%, while PAD increased by 79% from 1990 to 2006. Women's education manifested the largest differential in service use when compared to other key socioeconomic indicators.

#### **049. Violence at home and community: Young men becoming perpetrators of non-consensual sex and spousal violence in India "Finding the missing link"**

*Aparna Mukherjee, International Institute for Population Sciences (IIPS)*

Violence pervades the lives of a significant proportion of youth in India, but has a particularly devastating impact on males and minority youth. Generally young men are more likely to be perpetrators of violence and aggression, especially in cases of sexual victimization and homicides. Alongside, violence against women is rampant in India and spousal violence being its worst form. Even while dating, domestic and sexual violence affect women regardless of their age; teens and young women are especially vulnerable. While youth bullying experiences and sexual violence perpetration are both major public health problems, little research exists on the positive associations between the two. Paucity of research in India has examined the risk factors for violence and almost no studies are available on the ill-effects of violence across domains relevant to young men using longitudinal data. With this interest, this paper using "Youth in India: Situation and Needs Study, 2006-07" data set, this study tried to examine the association between youth aggressive behavior of males aged 15-29 and their perpetration of non-consensual sex and spousal violence against women. Explicitly, it reflects that both the impact of childhood exposure to parental spousal violence and witnessing violence in community in shaping conformation to the set gender role norms.

#### **050. Gender and development: exploring the successes and limitations of gender mainstreaming as a strategy**

*Sangeeta Kumari, International Institute for Population Sciences (IIPS)*

Gender mainstreaming has been a fundamental in the Gender and Development discourse. This has necessitated simplifying concepts related to gender inequality which in turn has created unrealistic expectations as to the ways in which social change takes place. It has thus legitimized an approach of rolling out programs, getting a few "jobs for the girls" and making development cooperation 'right' for women as main instruments of change. The strategy, which was linked to

dominant existing modernization paradigm of the 1960s and 1970s, was also only concerned with women-specific activities, where women were seen as passive recipients of development assistance like the provision of extension services, credit facilities and other income generation activities. There is still a long way to go before we have managed to significantly reduce inequalities between women and men globally. Equality between men and women constitutes an indicator of success in good governance. However women are not treated equally in governance institution and process. The gender issues become a core consideration not simply for specific departments or ministries dealing with women, but for all actors across a range of issue-areas and also at all stages in the policy process from conception and legislation to implementation and evaluation.

#### **050. Gender and Reproductive Outcomes: The Effect of a Radio Serial Drama in Northern Nigeria**

*Fatou Jah, Population Media Center; Kriss Barker, Population Media Center*

Mass media campaigns to promote family planning and reproductive health have led to positive changes in reproductive and gender outcomes but most intervention evaluation studies have not focused on the mediating role of gender norms. Baseline and endline representative data collected for the evaluation of a family planning and reproductive health radio serial intervention program aired in Northern Nigeria are analyzed to examine program effects on changes in reproductive and gender outcomes. Results show that 70% of the sample listened to the program. On all reproductive outcomes, listeners were more likely at endline than at baseline to report positive changes, especially on behavioural outcomes. Comparison of listeners and non-listeners found positive program impact only on two of these outcomes. The same pattern of effects is seen for the gender outcomes with impact stronger at endline than between listeners and non-listeners. Implications are discussed.

#### **050. Mesure de l'activité économique et relations de genre au Cameroun**

*Théophile Armand Fopa Diesse, Institut de formation et de Recherche Démographiques (IFORD)*

Le bilan de quatre décennies de recherches consacrées aux rapports population et développement en Afrique, laisse apparaître une occultation de taille : celle de la contribution féminine au développement et aux économies locales. Le Cameroun, Afrique en miniature, n'est pas en marge de ce phénomène et ce, malgré d'importants efforts entrepris par le gouvernement en faveur de l'égalité des genres et de la promotion de la femme. En effet, la troisième Enquête Camerounaise Auprès des Ménages (ECAM3, 2007) révèle que les taux d'activité au sens du BIT sont plus élevés chez les hommes que chez les femmes. Cet écart varie de 10 à 30 points selon les régions et le milieu de résidence. L'objectif de cette communication est de rechercher les facteurs qui déterminent l'exercice d'une activité économique. Pour ce faire, les données de l'ECAM3 seront utilisées. Par ailleurs, une analyse multiniveau sera recourue pour déterminer simultanément les caractéristiques propres aux individus et les facteurs contextuels susceptibles d'expliquer les disparités observées en matière d'emploi selon le genre. Des résultats préliminaires montrent que les facteurs liés au contexte de résidence tendent à accroître les disparités entre les hommes et les femmes dans l'exercice d'une activité économique par rapport aux facteurs individuels.

#### **050. Social Changes and the Gender-Environment Nexus in Contemporary Rural China: Evidence from an Inner Mongolian Village**

*Yukun Hu, Peking University*

Agrarian development in China was basically characterized by contrasting stages of collectivization and decollectivization over the past six decades, and each resulted in sweeping social and economic changes. The lived experiences of rural women's and men's daily productive and reproductive activities in specific geographic settings, may have shaped their surrounding

environment and vice versa. So far, research on the linkages between gender and the environment in rural China has received little attention and no empirical study at the village level has been carried out. Based upon an ethnographic fieldwork in an Inner Mongolian village, this article seeks to document the evolution of the gender-environment nexus and explore its determinants in larger processes over the past 60 years. A closer look at everyday experiences of local men and women indicates that the complex intersections of gender and the environment occurred in larger processes at the macro level, which were closely linked to the role of the powerful state. The dynamic relations were implicated simultaneously in shifting social norms and practices at the local level. This paper therefore suggests a holistic approach towards understanding of shifting and complex intersections, contributing to ongoing feminist debates on women/gender and the environment.

### **051. Cash or Quality? Impact of Public Policies on Use of Maternal Care in India**

*Sonalde Desai, University of Maryland & National Council of Applied Economic Research, New Delhi; Reeve Vanneman, University of Maryland*

In recent years, the role of the state in provision of public services is being reexamined around the world with many experiment in alternative service delivery structures. India is at the forefront of some of these innovative programs which include one of world's largest conditional cash transfer programs – payment to women and community health workers for hospital delivery as well as health insurance program for the poor where government pays the premiums for use of government as well private health facilities. These investments should improve maternal health outcomes including use of prenatal care, hospital delivery and postnatal care. However, these programs are set up in a context where public service delivery systems remain indifferent to patient welfare, private health systems are poorly monitored and gender norms and intra-household inequalities constrain women's ability to seek health care. Thus, careful evaluation of these programs and their impact is necessary to understand their effectiveness and ability to reach the poorest. Using unique nationally representative longitudinal survey of over 40,000 households conducted before and after, this paper examines the impact of India's Janani Suraksha Yojana (JSY), a conditional cash transfer program for hospital delivery, for improving access to maternal care.

### **051. Quality of Maternal Health Services and their Utilization in Five States of Nigeria**

*Anastasia Jessica Gage, Tulane University; Onyebuchi V Ilombu, Independent Consultant; Akanni Ibukun Akinyemi, Obafemi Awolowo University, Ile Ife*

Using linked data from the 2009 COMPASS health facility and household surveys, this paper examines the association of the quality of maternal health services with their use in the past five years in five states of Nigeria. The results of multilevel logistic regression models revealed a strong positive association between the availability of essential delivery care equipment and supplies and the odds of initiating antenatal care in the first trimester of pregnancy. The odds of institutional delivery were significantly higher in Local Government Areas (LGAs) that scored higher on management practices that were supportive of quality maternal health services than in LGAs that scored lower, after controlling for other factors. More comprehensive provider training on maternal health had a significant negative association with skilled attendance at birth and institutional delivery. The findings suggest that efforts to increase the utilization of maternal health services should improve health facility management practices, ensure the availability of essential equipment and supplies, and conduct further research to better understand how provider training may influence service use.

### **051. The Influence of Social Health Protection Mechanisms and Community Level Factors on Facility Delivery and Antenatal Care Use in Cambodia: A Multilevel Modeling Approach**

*Ashish Bajracharya, Population Council; Antonia Dingle, London School of Hygiene and Tropical Medicine; Ben Bellows, Population Council*

In Cambodia, recent figures have shown impressive declines in the maternal mortality rate alongside commensurate increases in maternal healthcare use over the last decade (DHS 2010). In this paper, we examine the determinants of this rise in service use in Cambodia, particularly focusing on the role of social health protection schemes such as health equity funds in driving this change. Using baseline survey data from the evaluation of the Reproductive Health (RH) vouchers program being conducted by Population Council (N=2201), we use a binary response multilevel random effects model to examine both individual-level and community-level influences on facility-based deliveries and antenatal care use among women in three provinces in Cambodia. Preliminary results suggest that social health protection schemes as well as community-level influences are significant in determining the use of maternal healthcare services. Implications for policy development and healthcare financing programs including the targeted RH voucher program are discussed.

### **051. What works - what does not work for pay-for-performance models for maternal health program- Experience from an operations research in Bangladesh**

*Laila Rahman, University of Toronto*

**Introduction.** Maternal health care suffers from sub-optimal performance, client extortion and low quality of care in Bangladesh. Supply side barriers with a synergistic effect on demand side constraints make services inaccessible for poor women living in rural, remote areas. **Theoretical focus.** Inspired by Pay-for-performance (P4P) that ties performance with financial incentives, the government implemented two P4P models- Strategy-I incentivized both providers and clients, and Strategy-II only the providers. **Methods.** With a quasi-experimental design, interviews with 2,124 exit clients and 473 providers were conducted; monthly service statistics, quarterly quality assurance visit measurements, and auditor's validation reports were collected for evaluation. **Findings.** Institutional deliveries and quality of care score were increased significantly. Overall client satisfaction was highest in strategy-I for providing free medicines and not requiring extra payment. Cost per service unit was US\$8. Although overall client satisfaction increased, staff behavior was not improved. Targets could not be set for complications services. Facilities not having minimal staff tend to fail. **Conclusions.** The study tested a team based incentive mechanism. Design adjustments are to be made to make providers accountable for their behaviors.

### **052. Family Planning and Fertility: Estimating Program Effects using Cross-sectional Data**

*Claus C Portner, Seattle University; Kathleen Beegle, World Bank; Luc Christiaensen, World Bank*

Although reproductive health advocates consider family planning programs the intervention of choice to reduce fertility, there remains a great deal of scepticism among economists as to their effectiveness, despite little rigorous evidence to support either position. This study explores the effects of family planning in Ethiopia using a novel set of instruments to control for potential non-random program placement. The instruments are based on ordinal rankings of area characteristics, motivated by competition between areas for resources. Access to family planning is found to reduce completed fertility by more than 1 child among women without education. No effect is found among women with some formal schooling, suggesting that family planning and formal education act as substitutes, at least in this low income, low growth setting. This provides support to the notion that increasing access to family planning can provide an important, complementary entry point to kick-start the process of fertility reduction.

## **052. La portée de l'éducation dans les progrès en utilisation de la contraception en Afrique Centrale et de l'Ouest : une évaluation des programmes de planification familiale**

*Nadège Chouapi Kouam Dzutseu, Iford*

La pratique contraceptive moderne a un fondement culturelle important en Afrique subsaharienne et l'importation des modèles culturels modernes à travers l'éducation aurait pu constituer un catalyseur de l'adhésion populaire. S'il est vrai que le niveau d'éducation s'est constamment amélioré au cours des quatre dernières décennies dans cette région, il moins vrai que les programmes de planification familiale, vieux de ce même âge, ont eu l'effet escompté. L'indice synthétique de fécondité est resté le plus élevé au monde en Afrique central (5,21) et de l'Ouest (5,25) en 2012. La pratique de la contraception moderne reste faible en Afrique subsaharienne en 2011 (15,7%), comparée au niveau de l'ensemble de l'Afrique (22,4%), avec d'importantes disparités. Tout de même, il est observé une augmentation dans l'utilisation de la contraception, bien qu'elle soit faible. Cet article voudrait contribuer à l'identification des sources des changements observés dans les différents pays en ce qui concerne l'éducation. Ceci implique une évaluation de l'atteinte des objectifs des politiques mises en œuvre par les différents pays, à travers une méthode d'analyse simple et appropriée, la méthode des décompositions des données au niveau macro. Cette analyse permettra de mieux réorienter les politiques en vigueur.

## **052. The effect of program exposure on the validity of contraceptive use as an indicator of family planning service impact in northern Ghana**

*Elizabeth Jackson, Columbia University Mailman School of Public Health; Ayaga A. Bawah, Columbia University; Colin Baynes, Columbia University/Ifakara Health Institute; John E. Williams, Navrongo Health Research Centre; James F. Phillips, Columbia University*

This paper examines a decade of demographic surveillance and prospective panel survey data recording proximate fertility determinants in rural northern Ghana where a quasi-experiment tested the fertility impact of alternative contraceptive service provision strategies. As expected, treatments explain variance in observed fertility. However, analyses also reveal that fertility implied by proximate determinant responses exceeds observed fertility in areas where convenient doorstep family planning services were provided by community-based nurses and/or by community volunteers, suggesting that denial of contraceptive practice among survey respondents covaries with community exposure to family planning promotional activities and male mobilization. Trends suggest that unexplained fertility increases over time, challenging the assumption that stated contraceptive prevalence represents a valid endpoint for studies of the reproductive impact of community-based family planning services.

## **052. Assessing abortion providers' knowledge, attitude, and practice after the R3M program in Ghana**

*Fatima Juarez, El Colegio De Mexico; Aparna Sundaram, Guttmacher Institute; Clement Ahiadeke, University of Ghana; Susheela D Singh, Guttmacher Institute; Nakeisha Blades, Guttmacher Institute*

In an effort to reduce the mortality and morbidity associated with unsafe abortion in Ghana, in 2006 the government of Ghana, in association with 5 other organizations, implemented a program for improving comprehensive abortion care in the country. This program was piloted in seven districts across three regions – Greater Accra, Eastern, and Ashanti. In this paper, we use a survey specially collected for this study to assess if the interventions from this program have helped improve the knowledge, attitudes, and practices (KAP) of health care providers towards comprehensive abortion care services. Since the program had not been implemented across the country, the study was set up as an experiment, with the treatment group including the districts where the program was implemented. The control group included districts where the program wasn't implemented. Propensity score matching techniques will be used to compare the providers

in the intervention and control groups, and to evaluate if the program has made any difference where it was implemented. We expect to find that districts where the saturation of interventions was the highest will show the maximum change in the KAP of abortion providers, thereby enabling improved abortion care services and ensuring better reproductive health among women.

### **053. A Decomposition of Black-White Differences in the Rate of Age-Related Mortality Increase**

*Andrew Fenelon, Brown University*

The increase in mortality rates with advancing age is thought to reflect functional decline and processes associated with physiological aging. When viewed on a logarithmic scale, mortality rates tend to increase at a constant rate in the adult age range. This “slope”, the Rate of Mortality Increase with age is commonly used as a measure of actuarial aging in biodemographic research. The goal of this paper is to examine the black-white difference in this slope – a lower rate of mortality increase among blacks. The analysis uses a unique application of classical decomposition methods to partition the black-white RMI disparity into two components, each reflecting a dimension of cause-specific mortality disparities between blacks and whites. The first component reflects the extent to which the rate of increase among blacks is lower for individual causes of death. The second reflects the extent to which the cause of death distribution among blacks is tilted towards causes of death that increase relatively slowly with age. These results are also related to the well-known black white mortality crossover – the tendency for mortality among whites to exceed that of blacks at the oldest ages.

### **053. Insights on longevity: An analysis of the modal life span by leading causes of death in Canada**

*Viorela Diaconu, Université de Montréal; Robert Bourbeau, Université de Montréal; Nadine Ouellette, University of California, Berkeley; Carlo Giovanni Camarda, Institut National d'Études Démographiques (INED)*

This study focuses on the contribution of leading causes of death to the general phenomenon of mortality compression in Canada, a topic that has received very limited attention thus far. We analyse the evolution through time of the adult modal age at death (M) and the standard deviation above the mode (SD(M+)) for each leading cause of death in Canada (1974-2008), thanks to detailed data by cause, sex, single year of age and calendar year obtained through a special governmental initiative aiming for greater data access. Changes in the adult age-at-death distribution, such as described by M and SD(M+), are evaluated using a novel nonparametric smoothing approach known as the P-splines method, that we specifically adapt to the context of cause of death analysis. Preliminary results show that between 1974 and 2008, M has increased while SD(M+) has decreased for cancer and heart diseases, Canada's top two leading causes of death.

### **053. Is a limit to the median length of human life imminent?**

*Joel E. E Cohen, Rockefeller University; Jacob N Oppenheim, The Rockefeller University*

Human life length tripled in historical times. To examine whether an end to increases in life length is imminent, we computed the median life length and the remaining life expectancy for 6,560 life tables from 1800 to 2008. Within almost all intervals of 20 years, for almost all countries, as median life length increased, the remaining life expectancy at the median life length decreased linearly. This empirical pattern in life tables has not been previously observed. The slope and intercept of this linear relation differed among countries in a given time interval and among time intervals for a given country. This linear relation suggested a hypothetical, easily calculated index of maximal median life length (MMLL) for a given country and time interval, namely, the median life length, according to this decreasing linear relation, at which the remaining life expectancy is

zero. In successive 20-year time intervals starting from 1800-1819, the largest value (over all countries, within a given 20-year interval of observation) of this MMLL increased by more than one year of life per year of calendar time. There was no sign of a decreasing rate of increase, suggesting that a limit on median life length is not imminent.

#### **053. The role of smoking on mortality compression: an analysis of Finnish occupational social classes, 1971-2010**

*Alyson Van Raalte, Max Planck Institute for Demographic Research; Mikko Myrskylä, Max Planck Institute for Demographic Research; Pekka Martikainen, University of Helsinki*

Adult lifespan variation has been stagnant since the 1960s in most countries, despite increases in longevity. We investigated the role that smoking has played in this stagnation using Finnish register data by occupational class (1971-2007). We expected stronger mortality compression in the absence of smoking and expected smoking-attributable mortality to explain divergences in compression by occupational group. Instead we only found a modest impact on lifespan variation from smoking, despite it having a large impact on longevity. Among men, diverging trends in lifespan variation by occupational class would have widened even further in the absence of smoking, while among women trends in lifespan variation were mostly unaffected by smoking. The maturation of the smoking epidemic is not expected to bring about strong reductions in the uncertainty in the timing of death, nor is it expected to reduce inequalities in this dimension by occupational class in Finland.

#### **054. China's Low Fertility and Policy Response**

*Zhigang Guo, Peking University*

China's birth control campaign has been carried out for 40 years, with the one-child policy in effect for 30 years. China's fertility rate fell below the replacement level in the early 1990s, and to a very low level at present, 1.18 of TFR, according to the latest population census conducted in 2010.

In fact, many surveys in the last two decade reported a very low level of TFR in China, but Chinese birth control bureaucrats have regarded the results as false statistics due to under-count of births, and insisted that China's TFR hovers around the 1.8 mark. Such an official judgment misled the decision making and delayed adjustment in fertility policy, entangling in an impractical claim for "stabilizing the low fertility". The shrinking birth number each year is still "achievement" in the eyes of quite many people, especially those with power and say.

It turns out that China's 2010 census revealed that China's population has grown more slowly than official projections, based on an assumed total fertility rate of 1.8. China's population is aging faster than expected, and the fertility level is indeed too low and will begin to place enormous strains on the economy in the near future.

There have been signs that top leaders of China are considering to adjust the tight birth control policy. In the Report to the Eighteenth National Congress of the Communist Party of China on Nov 8, 2012, the earlier official statement of "stabilizing low fertility" was no longer to be found.

#### **054. Japan's Low Fertility and Policy Interventions**

*Toru Suzuki, National Institute of Population and Social Security Research*

After two decades of the golden age of family when fertility stayed around the replacement level, the second demographic transition started in the mid-1970s and the TFR in Japan has stayed far below replacement level for almost 40 years. The latest population projection suggests that there will be no significant improvement in fertility and that population decline and aging will be very severe. While the rise in consumer/producer ratio could be avoided with the expected rise in labor force participation, the rapid population aging still has negative impact on economy. Although fertility decline has larger impact on population aging, the effect of mortality decline is also

significant especially in low fertility setting. While nuptiality decline accounts for a large part of fertility decline, decline in marital fertility also contributed. Fertility decline in Japan can be understood not from reduced demand for children but from obstacles to achieve the demand. Such obstacles include rising cost of children, worsened labor market condition for young workers and low compatibility between work and family for women. Japan turned to pronatal policy in the early 1990s. Policy measures include child allowance, childcare leave, work-life-balance campaign, improvement in childcare services, etc. The Democratic Party failed to keep its election promise in 2009 to expand child allowance, giving negative impact on people's trust on governmental policy.

#### **054. Pronatalist Fringe Benefits and Its Policy Implication in South Korea**

*Seulki Choi, KDI School of Public Policy and Management*

South Korea has been experiencing lowest-low fertilities for more than a decade since 2001. With the enactment of Low Fertility and Aging Society Basic Act in 2005, a nation-wide effort has been invested in dragging low fertilities up. Numerous scholars also endeavored to isolate various factors, such as family composition, household income, home ownership, that have been responsible for low fertilities. Working conditions of female employees, however, have rarely been related to low fertilities. In this line of research, we attempt to examine effects of female employees' fringe benefits on differential fertility. More specifically, we are interested in examining effects of existence and availability of 1) maternity leave, 2) parental leave, and 3) financial assistance to child cares. We formulate multiple theoretical predictions on the relationships between aforementioned fringe benefits and fertility, based on neo-economic, sociological, and psychological theories that are contradictory and conflicting rather than consistent across those social theories. We develop not only theoretical predictions on average effects but effect heterogeneity by birth order drawing from sexual pleasure, learning effect and career seeking behaviors literatures. To test those theories, we utilize Cox proportional hazards model to fit the Korea Labor and Income Panel Study from 2001 to 2008.

#### **054. Ultra-Low Fertility, Gender Equity and Policy Considerations?**

*Edward Chow-Ching Tu, Hong Kong University of Science and Technology*

Paper to be presented at the Policy Responses to Lowest-Low Fertility in Asia-Pacific Region under IUSSP Special Sessions of Asia-Pacific Region, August 26-31, 2013 Pusan, South Korea  
The paper focuses on the issue regarding why are fertility patterns in so many industrialized and post-industrialized societies declining and declining so rapidly in most newly industrialized countries especially in East Asia, and especially after countries have adopted the capitalist and market economy as the preferred approach to improve the lives of their population?

We focus on the discussion of gender equity and the relationship between fertility and female labor force participation in the industrialized and post-industrialized countries, in the context of role incompatibility mainly for women, and the level of the strength and rigidity of family- and gender-role norms/attitudes that affect men's behavior as well as women's. Furthermore, the existing family-related policies and programs which have reduced the role conflict and incompatibility experienced by working mothers are reviewed and discussed under national orientations towards the resolution of work-family conflict since they could affect the relevance, acceptance, significance and effectiveness of policies being developed and approved to carry on under institutional context within a nation. Specific strategies and policy to reduce role incompatibility and childcare arrangements and its cost are discussed especially for East Asian nations.

## **056. Homosexualité et prostitution masculine en cote d'ivoire : la situation chez les jeunes de moins de 25 ans**

*Elise Amoin Kacou, Ecole Nationale de Statistique et d'économie appliquée; Glebelho Lazare Sika, ENSEA*

Il existe très peu de données sur les Hommes ayant des rapports Sexuels avec d'autres Hommes (HSH) en Côte d'Ivoire. A l'instar de plusieurs pays d'Afrique, cette lacune renforce et accentue la vulnérabilité des HSH lors de l'élaboration et de l'exécution de nombreux programmes de lutte contre le VIH/Sida, car la quasi-totalité n'est pas pris en compte ou à tout le moins dans des rares cas. De même, il n'existe pratiquement pas de données sur la prostitution masculine en Côte d'Ivoire. Cette communication a pour objet de présenter l'ampleur de l'homosexualité et de la prostitution masculine, les comportements sexuels à risques, ses conséquences sur la lutte contre le Sida et les interventions menées auprès de cette cible.

A partir d'une analyse purement descriptive, nous tenterons de mettre en lumière la pratique de la prostitution chez les jeunes homosexuels de 15-24 ans avec un accent particulier sur la propagation des IST/VIH/Sida..

## **056. Network coverage in Respondent Driven Sampling**

*M Giovanna Merli, Duke University; James Moody, Duke University; Jeff Smith, Duke University; Ashton M Verdery, University of North Carolina at Chapel Hill; Jing Li, Duke University; Sharon Weir, University of North Carolina Chapel Hill; Xiangsheng Chen, China Center for STD Control*

We evaluate Respondent Driven Sampling (RDS)'s claim of population representation with empirical data by exploring the network coverage in a RDS study of female sex workers (FSW) in China. We take advantage of unique information on the social networks of FSW obtained from two overlapping studies of FSWs --RDS and a venue-based sampling approach (PLACE) -- and use an exponential random graph modeling (ERGM) framework from local networks to construct the likely network from which our observed RDS is drawn. We then run recruitment chains over this simulated population and produce a sample with characteristics consistent with the observed RDS. We estimate population coverage rates by comparing population proportions and RDS sample proportions. We discuss the results in light of (a) potential estimation improvements implicit in network information, (b) strategies for improving coverage rates, and (c) multiple sources of potential variability in coverage.

## **056. Transactional Sex Risk across a Typology of Rural and Urban Female Sex Workers in Indonesia: A Mixed Methods Study**

*Dewi Ismajani Puradiredja, London School of Hygiene and Tropical Medicine (LSHTM)*

Context-specific typologies of female sex workers (FSWs) are essential for the design of HIV intervention programming. This study develops a novel FSW typology for the analysis of transactional sex risk in rural and urban settings in Indonesia. Mixed methods include a survey of rural and urban FSWs (n=310), in-depth interviews (n=11), key informant interviews (n=5) and ethnographic assessments. Thematic analysis categorises FSWs into 5 distinct groups based on geographical location of their sex work settings, place of solicitation, and whether sex work is their primary occupation. Multiple regression analysis shows that the likelihood of consistent condom use was higher among urban venue-based FSWs for whom sex work is not the only source of income than for any of the other rural and urban FSW groups. This effect was explained by the significantly lower likelihood of consistent condom use by rural venue-based FSWs (adjusted OR: 0.35 95% CI 0.13-0.92, p=0.033). The FSW typology and differences in organisational features and social dynamics are more closely related to the risk of unprotected transactional sex, than levels of condom awareness and availability. Interventions need context-specific strategies to reach the different FSWs identified by this study's typology.

**056. “Laugh at poverty, not at prostitution”: a mixed methods study of the drivers of HIV among male sex workers in China**

*Paul Bouanchaud, London School of Economics and Political Science (LSE)*

Background: This paper presents the first mixed methods study of the HIV risk environments of MSW in China. Chinese MSW are highly stigmatised, occupying marginal social positions, undertaking illegal/hidden behaviours. They are at an increased risk of HIV infection due to multiple risk exposures. Methods: The mixed methods research was conducted in Guangdong, China in 2011. Following ethnographic mapping, MSW (n=251) were surveyed using a structured questionnaire and a sub-sample (n=21) were interviewed in-depth. Results: Levels of HIV knowledge varied according to a number of socio-economic variables. Reasons for entering sex work, and subsequent risk taking behaviours including drug use appeared to largely centre around economic needs or desires. The survey reveals that levels of condom use varied considerably by partner type and gender. Qualitative analyses suggest that issues of intimacy and stigma played an important role in this behavioural decision making process. These men also show very high levels of mobility, making them hard to reach. Discussion: As a mixed methods study of MSW in China, we present a more nuanced exploration of the drivers of HIV in this marginalised group than previous work has been able to. We present evidence that may be useful in identifying potential avenues for more targeted interventions.

**057. When a poor index becomes a good proxy: on the predictive value of individual fertility preferences at the cohort macro-level**

*Eva Beaujouan, Wittgenstein Centre: Vienna Institute of Demography, Austrian Academy of Science; Laurent Toulemon, Institut National d'Études Démographiques (INED)*

Use of fertility expectations in predicting aggregate fertility has often been criticized, because intentions are generally not very good predictors of behaviours. However, for forecasting aims at the macro-level, authors show that partial-adjustments are possible that improve the consistency and predictive power of expectations to predict fertility. They can account for the decrease of expectations with age and its variation with marital, parity, etc. We want to analyse here the relations between cohort aggregate expectations at different ages and actual cohort completed fertility by testing a series of definitions of expectations (intended number of children, ideal and societal ideal family size), taking into account the differences between groups of people classified by partnership history, current parity and level of education. We use a set of French surveys, from past surveys on demographic situation to several French family surveys. When comparing trends in ideal, societal ideal, and intended family size and linking them to completed cohort fertility, we expect to find this relationship to be stable with time within the sub-groups, but overall diverse between the sub-groups. Further, modelling the bias in the indicators among different groups should enable to predict more accurately cohort total fertility.

**057. The impact of atypical working hours on fertility intentions**

*Ivan Čipin, University Of Zagreb, Department Of Demography; Petra Medimurec, University of Zagreb*

Relationship between fertility and female employment has been widely recognized in demographic literature. Also, the impact of atypical working hours, i.e. work involving long and overtime work hours and working at weekends, on work-family conflict has been the subject of several studies. However, research linking such working conditions to fertility behaviour remains scarce. The aim of this study is to explore whether atypical working hours affects women's childbearing behaviour. The research focus is on fertility intentions within the next three years, which are assumed to be a valid predictor of subsequent reproductive behaviour. Data are used from the fifth round of the European Social Survey. Sample is restricted to women aged 18 to 45 living with a

partner/husband. Control variables include age, number of children living in the household and years of full-time education. Preliminary results show a statistically significant impact of atypical working hours on childbearing intentions indicating that women who work evenings/nights and during weekends are more likely not to intend a(nother) child within the given time period. Furthermore, institutional and national specific factors such as childcare provision and parental leave may influence the ability to combine family with professional life.

#### **057. Flexibility, security or nothing? Women's job characteristics and fertility in Russia**

*Oxana V. Sinyavskaya, Higher School of Economics; Sunnee Billingsley, Stockholm University*

Based on the findings of previous empirical research, we can assume that differences between sectors and jobs in terms of security and flexibility of female employment might be important for fertility decisions. This relationship may arise because job characteristics influence the childbearing decision-making process directly or because women sort themselves into jobs based on their childbearing preferences. We aim to assess whether a relationship between job characteristics and fertility exists in Russia, a low fertility context, which can result from both directions of causality. We study the transition from childlessness to the first birth as well the transition to a second birth; the decline in second childbirths can account for a major part of the fertility decline in Russia, but postponement of childbearing can reduce the probability of subsequent births later as well. Our main research questions are the following: (1) To what extent do the intentions to and behavior of having a 1st and 2nd child correlate with women's job characteristics? (2) Which job characteristics are more related to fertility intentions –flexibility, less working hours or job security after childbirth? Preliminary findings reveal that job characteristics and sectors are more related to the timing of the first birth than to having a second birth.

#### **057. The impact of son preference on fertility behavior in the West Bank and Gaza Strip**

*Weeam Hammoudeh, Brown University*

Numerous studies have examined the sources, consequences, and manifestation of son preference in fertility behavior. A large proportion of these studies have focused on low fertility settings in East Asia, and especially in the skewed sex ratios of birth resulting from the practice of sex selective abortion. This paper examines the impact of son preference on individual fertility behavior in a high fertility setting, the occupied Palestinian territory (oPt). Many studies have noted the persistently high fertility rates in the oPt and have connected it to conflict. However, some anecdotal evidence exists for the impact of son preference on fertility behavior, where women are more likely to continue having children until they've reached the desired number of sons. This paper aims to examine the role son preference and sex distribution of current children play in fertility behavior in the occupied Palestinian territory (oPt), both in terms of timing of fertility and progression to subsequent parity levels using data from birth history calendars from a national health survey conducted in 2006. Parity-specific event history analysis was conducted. The results of this study show that after accounting for socio-demographic characteristics, women with a greater number of sons are less likely to have another child, irrespective of parity.

#### **058. A New Approach to Indirect Estimation of Crisis Mortality Associated with Armed Conflict & Famine**

*Romesh Silva, University of California, Berkeley*

Armed conflict and famine often have large-scale population consequences. Yet the measurement of the mortality consequences of such crises is challenging, given that accurate data at the population level before, during and after such crises is often lacking and classical demographic methods and model life tables are ill-suited for such situations. In this paper, I explore the flexible, two-dimensional mortality model recently proposed by Wilmoth et al. (2012) and consider its

adaptation to crisis mortality situations. Specifically, I draw on high quality data from a diverse array of demographic surveillance sites, population censuses, longitudinal surveys, and series from the Human Mortality Database to explore the suitability of this mortality modeling approach to famine and armed conflict situations. These situations include a diverse array of armed conflict and famine situations from both contemporary and historical populations. I contrast this approach with existing approaches used by the United Nations Population Division and the World Health Organization and conclude with an assessment of this indirect mortality modeling approach and outline future research directions to advance crisis mortality estimation approaches.

**058. A study of population change led by China's great famine (1958-1961): based on modified Lee-Carter model**

*Hong Mi, Institute of Population and Development, Zhejiang University; Mingxu Yang, Institute of Population and Development, Zhejiang University; Ning Jia, Institute of Population and Development*

China's great famine is known as "three-year natural disaster". For the lack of continuous statistical data from 1950 to 1982 in China, traditional research methods were powerless to reconstruct the life table and mortality trends. Calculation of excess deaths during the Great Famine is complicated and confusing. Data used in this study was from China's six censuses on age distributions, annual age-specific fertility and mortality rates which were also obtained from one-percent population samples survey initiated in 80's. Modified Lee-Carter model is used in the study. First of all there is the model of inverse prediction on mortality, then with continuous mortality statistics in 1982—2010, there goes with the matching of the model. Thirdly, normal age-specific mortality rates between 1958 and 1961 are restored. Then with population forecast algorithm, there is analysis of the population change during famine period. Finally, this paper evaluates the estimation of the number of excess deaths by other scholars. According to our calculations, the number of the excess deaths is between 18.94 to 21.03 million.

**058. Short and long-term impacts of famines. The case of the siege of Paris, 1870-1871**

*Denis Cogneau, PSE-IRD; Lionel Kesztenbaum, Institut National d'Études Démographiques (INED)*

From September 1870 to May 1871, the siege of Paris, first by the Prussian army then by 'legalist' French troops, resulted in a harsh famine: Parisians were forced to eat rats and even the elephant of the zoo. We study the impact of this shock on both child mortality and the height stature of survivors, with a specific focus on the selection effects linked to mortality as well as to fertility and migration. To this aim, we collect original data on 20 year-old military conscripts born in one of the poorest district of Paris between 1855 and 1875; conscripts born in the poorest district of Lyon, France's second largest city, are used as a comparison group. The analysis of height stature evolution across birth cohorts reveals a rather unusual pattern: a large drop in height of 2 centimeters is observed for cohorts who were 7 to 9 year-old by the time of the siege, whereas lower age children seem unaffected. Using data from the 1866, 1872 and 1876 population censuses, we examine whether selection effects can account for this specific timing, and conclude preliminarily it is not the case. We tentatively argue that early-age children were protected from the famine at the expense of their older brothers or sisters who could not catch up.

**059. Grasping the diversity of cohabitation: Fertility intentions among cohabiters across Europe**

*Nicole Hiekel, Netherlands Interdisciplinary Demographic Institute (NIDI); Teresa Castro Martin, Consejo Superior de Investigaciones Científicas (csic)*

The study addresses the diversity of cohabitation across Europe and examines whether the meanings cohabiters attach to their unions are differently associated with intentions to have a

child. Using data from the Generations and Gender Surveys on 3,006 cohabiters from nine European countries, we propose a cohabitation typology, based on intentions to marry, attitudes towards marriage, and subjective economic deprivation, and explore whether the links between cohabitation type and fertility intentions differ across Western and Eastern European countries. We find that the meaning of cohabitation, net of other covariates, influences fertility intentions and that, although cohabitation is quickly overtaking direct marriage as the leading form of union entry, there is little empirical evidence supporting the view that marriage and childbearing decisions are about to detach completely. In all countries examined, cohabiters who view cohabitation as a “prelude to marriage” are most likely to report short-term fertility intentions.

#### **059. Non-marital cohabitation in the census questionnaires worldwide**

*Jeroen J.A. Spijker, University of Edinburgh; Albert Esteve Palos, Centre d'Estudis Demogràfics; Teresa Antònia Cusidó-Vallverdú, Centre d'Estudis Demogràfics, Autonomous University of Barcelona; Robert McCaa, Minnesota Population Center*

If today Hajnal would have had to use proportions single from census data to characterize marriage regimes of countries in terms of marriage timing and intensity, he would be faced with the widespread phenomenon of non-marital cohabitation which is increasingly dissociating relationship status from legal marital status. The main objective of the paper is therefore to document how historically and currently censuses have dealt with the issue of cohabitation. To do so, we have exhaustively analyzed of 900+ census questionnaires, representing about 200 countries, covering most of the world's population from 1970 to 2010. The inventory showed that direct ways in which cohabitation is captured include using the question on marital status (e.g. common-law marriage), a separate question on consensual unions (if available) and on the relationship to the head of household (e.g. spouse). Indirect way include the presence, or existence, of own children (mainly asked to women). As the spread of cohabitation has increased the proportion single in many countries, the census measure ‘legal marital status’ is losing its validity and practical use as an indicator of union status. While some censuses now capture current cohabitation, capturing the ‘ever in cohabitation’ is still a challenge.

#### **059. Variation in the intersection between partnership and fertility: A comparison across 3 cohorts in 16 countries**

*Mark J Lyons-Amos, University of Southampton; Brienna Perelli-Harris, University of Southampton*

The intersection between partnership forms and fertility is increasingly complicated in the United States and European countries. This is due to increasing variety in partnership forms, diversity in fertility and changes in the way that these two processes interact. For example, in countries such as Norway, non-marital cohabitation, birth postponement and births to stable but non-marital partnerships are important, while in Italy, birth is largely restricted to marital relationships, which are universal albeit postponed. This paper uses Latent Class Growth models to evaluate the relationship between partnership and fertility and how this varies across the United States and 15 European countries. These models optimise a number of typical behaviours, and we examine how these are distributed across both birth cohort and national setting, to evaluate not only variations in behaviour, but also differences in how relationships have changed during the 20th century.

#### **059. “Come We Stay”: Changes in Family, Marriage and Fertility in Western and Coastal Kenya**

*Salome Wawire, Independent Consultant; An-Magritt Jensen, Norwegian University of Science And Technology (ntnu)*

In high fertility populations, marriage and marriage processes are known to play a critical role in regulating fertility. We examine the connection between changes in marriage and attitudes towards

fertility. How do different generations of women perceive marriage and family? How do changes in family formation influence marital practices like marital timing, spouse choice, living arrangements and number and spacing of children? How have changes in attitude affected fertility behaviors? We use qualitative data from Bungoma and Kwale, Kenya. We show that marriage processes are fast changing, favoring pragmatic unions, commonly called ‘come-we-stay’, most of which are driven by pre-marital pregnancies and lack of resources required for formal marriage. ‘Come-we-stay’ unions are common among the young cohort, but are increasingly becoming acceptable. Their temporary nature causes women to be insecure and desire more children to secure the marriage. The desire for permanence in the union is clearly shown to influence women’s fertility desires and outcomes.

#### **060. International graduates and the region - the example of Göttingen/Germany**

*Rebecca Tlatlik, University of Kassel; Beatrice Knerr, University of Kassel*

There is a growing demand for highly skilled labour force in Germany. The ability of regions to attract sufficient labour force becomes more and more important, considering the aging and shrinking working population. It can be assumed that places with universities have an advantage in attracting highly skilled labour because of the continuous inflow of students. Among them, one can find more and more international students. Understanding which factors have an influence on their intention to stay or leave the region is the focus of this study. Based on the creative class theory a case study was conducted among 253 international Master and PhD students at the University of Göttingen, Germany. Using descriptive statistics and binary logistic regression analysis, we established that the majority of international students can imagine staying in the region after graduation, while most of them are not familiar with regional companies. These results show that international students and companies do not have sufficient access to each other and imply that efforts have to be made to promote the publicity of regional companies in order to retain international talents.

#### **060. Interprovincial migration of Canadian immigrants**

*Barry Edmonston, University of Victoria; Sharon M Lee, University of Victoria; Zheng Wu, University of Victoria*

Data from the 1981, 1986, 1991, 1996, 2001, and 2006 censuses of Canada offer evidence on the migration experience of earlier immigrant cohorts in the five years prior to the census. These censuses provide direct data on interprovincial flows of immigration cohorts during the 1976 to 2006 period. They also provide indirect evidence for the internal redistribution of those immigrants who arrived in Canada between during the five years prior to each census. Regarding the question of whether immigrants tend to concentrate or disperse during their initial year of residence in Canada, these data provide no systematic evidence of dispersion of immigrants throughout the Canadian provinces. Immigrants move more than the Canada-born population during their first 20 years in Canada and, at the provincial level, they tend to stay in provinces in which there are a higher proportion of their immigrant co-ethnics. Analysis of the migratory behaviour of recent immigrant cohorts provides evidence that there are distinct patterns of higher and lower migration for some ethnic origin groups. Moreover, groups vary in their response to the proportion of foreign-born of the same ethnicity.

#### **060. Understanding the Fertility Convergence of Migrant Generations**

*Ben Wilson, London School of Economics and Political Science (LSE)*

In order to understand the changing fertility of migrant generations, and its impact on destination countries, previous research has attempted to test migrant fertility convergence. However, the existing literature suffers from numerous conceptual and methodological problems. This paper demonstrates these weaknesses, proposes a new conceptual framework, and then assesses the

convergence of migrant generations towards native fertility levels. Completed fertility is estimated for different generations of the UK population using count regression and survey estimation techniques. Unlike previous research, this allows hypotheses to be isolated, and avoids results being confounded due to birth timing differentials.

The results show a narrowing of fertility differentials between migrant and natives for more recent birth cohorts, suggesting fertility adaptation for the first and second generation. However, there is considerable variation by country of origin. Comparisons between generations, for men and women, show evidence of adaptation for Old Commonwealth migrants (and Jamaican women), and cultural entrenchment for Indian and Pakistani migrants. To conclude, the paper discusses the value of this method for informing population projections, and shows the likely influence of these fertility convergence patterns on UK fertility.

#### **060. Migrant laborers, spouses and the spread of HIV/AIDS in rural Mozambique**

*Ines Macamo Raimundo, Eduardo Mondlane University*

Southern Mozambique is under immense pressure due to increase of HIV infection. While men migrate in search for household income women left behind are still tied by patriarchy norms with a little evidence of the impact of condom use. The article is based on data collected from a study funded by NIH/NIACD of US about "Men's HIV risk in Gaza province of Mozambique". The study resulted from a combination of quantitative methods and in depth interviews of laborers migrant's wives. Yet the underlying dynamics of the relationships between the laborer migrants and their spouses/partners have geared to permanent risks on HIV infection as in many cases both partners have "ignored" condom use. This paper aims to provide information on vulnerability to HIV infection of rural families in the context of males' migration and the extent do wives prevent HIV within a patriarchy society. Are families willing to die silently?

#### **061. Revisiting Construction of Period Life Tables**

*Qingfeng Li, Johns Hopkins Bloomberg School of Public Health; Stan Becker, Johns Hopkins University*

A classic problem in life table construction is the calculation of the probability of death in an age interval  $(x, x+n)$  from the observed age-specific death rate  ${}_nM_x$ . For period life tables one typically makes the assumption that  ${}_nM_x = {}_n m_x$  and proceeds to apply conversion formula  ${}_n q_x = (n \cdot {}_n m_x) / (1 + n \cdot (1 - {}_n a_x) \cdot {}_n m_x)$ . However, the application of this formula derived from a cohort perspective to estimation for life tables calculated from period data can be problematic. Cohort measure are different from their period counterparts in that cohort measures are concerned with all events that occurred to the cohort members while period measures are only concerned with the events that occurred to individuals within a given period and age interval. Three issues might preclude the direct application of the formula above to period life table construction: the ambiguity in the definition of  ${}_n a_x$ ; the definition of  ${}_n M_x$ ; the conversion formula between  ${}_n m_x$  and  ${}_n q_x$ . In this paper, we give clear definition for  ${}_n a_x$  and  ${}_n M_x$  from period perspectives, and derive the conversion formula between  ${}_n m_x$  and  ${}_n q_x$  for the construction of period life tables. We use simulated data to illustrate the problems with traditional indicators and assess the performance of our revised definitions.

#### **061. Intercensal life tables consistent with population projections**

*Jeronimo Oliveira Muniz, Universidade Federal de Minas Gerais (UFMG)*

Intercensal methods have been broadly used to estimate mortality in developed and less developed countries with deficient or incomplete data. These methods have several advantages over indirect methods because they do not require the use of model life tables and provide sufficiently accurate results even in the presence of age distortions and death under-registration. The drawback of these methods, however, is that generated life tables do not provide ex post projections of the baseline

population that are consistent with the subsequent enumeration, even after adjusting for migration and age misreporting. This article demonstrates these inconsistencies by reviewing and comparing the results of three well established methods. We introduce a simple procedure to solve this inconsistency by providing life tables that are accurate and which generate identical projected and input populations. The empirical illustration demonstrating its efficacy draws on data from Vietnam, but the method can be extended to any context and time period.

#### **061. The Maximized Inner Rectangle Approach (MIRA) -- Disentangling Rectangularization**

*Marcus Ebeling, Max Planck Institute for Demographic Research (MPIDR); Roland Rau, University of Rostock; Annette Baudisch, Max Planck Institute for Demographic Research*

Rectangularization - the development of an increasingly rectangular shape of the survival curve - has been theoretically predicted and empirically noted among humans in nearly all low mortality countries in the last decade. Explanations that account for rectangularization and test their applicability to empirical data, however, remain limited. We propose a new approach that distinguishes between two different kinds of rectangularization, inner and outer rectangularization. Inner rectangularization refers to the rectangular shape produced by the mortality schedule, whereas outer refers to the used maximum living potential determined by the highest attained age. This allows us to implement the Maximized Inner Rectangle Approach (MIRA), which determines the biggest rectangle under the survival curve, thereby enabling a decomposition of the area below and above the survival curve. The empirical application of our models reveals that rectangular movement is not a new development, and has been a visible feature of the survival curve since the earliest survival data we have access to. Furthermore, our approach provides empirical evidence against compression as a mechanism underlying rectangularization, and supports the explanation that rectangularization is the result of a premature mortality decline.

#### **061. The Modified Orphanhood Method: Potentials And Limitations**

*Marc Luy, Wittgenstein Centre (IIASA, VID/OEAW, WU); Angela Wiedemann, Wittgenstein Centre (IIASA, VID/OEAW, WU)*

The work of demographers in developing countries is limited by the fact that demographic data are either nonexistent or of too bad quality to be usable. Therefore, indirect estimation techniques based on survey data are used to estimate levels and trends of mortality and life expectancy. But also mortality researchers in developed countries are often faced with the problem of nonexistent data when they are interested in specific phenomena of mortality differentials. In order to improve the availability of information on specific mortality differentials in cases where no official data are available, Luy (2009, 2012) suggested a modified version of the orphanhood method (MOM) for indirect estimation of adult mortality from survey information on maternal and paternal survival to permit its application to populations of developed countries. The aim of this paper is to demonstrate the formal demographic relationships behind the MOM and to illustrate the method's potentials and limitations by summarizing the findings of different empirical applications. The latter will provide additional insights not only for the general usefulness of indirect estimation techniques in developed countries but also for the application of the traditional variants of the orphanhood method in developing countries.

#### **062. Real wage and labor supply in a quasi life-cycle framework: a macro compression by Swedish National Transfer Accounts 1985-2003**

*Haodong Qi, Centre for Economic Demography, Lund University*

This paper examines the life-cycle dynamics of real wages and labor supply in Sweden. The descriptive results lend support to the intertemporal substitution hypothesis (ISH), as the age patterns of both real wages and labor force participation (LFP) are hump-shaped. However, the age-wage profiles increasingly shift towards older ages over time, whereas the age-LFP profiles do

not. This leads to an accentuated difference-in-differences of the two variables over the ages 45-64, and, in turn, casts doubt on the explanatory power of ISH for the senior labor supply at the extensive margin. My econometric investigation of old-age LFP further implies that, at least at the aggregate level, the backward-bending supply curve may better reflect the retirement transition rather than intra- and/or inter-temporal substitution. Based on the estimated age-specific elasticities, I found spectacular life-cycle variation in the responses of labor supply to wage change. This suggests that an array of life-cycle parameters (rather than a constant elasticity for all ages) is needed in calibrating the Overlapping Generation Model (OLG).

### **062. Reallocation of resources across age in a comparative European setting**

*Bernhard Hammer, Vienna University of Technology; Alexia Fuernkrantz-Prskawetz, Vienna University of Technology; Inga Freund, Vienna University of Technology*

We investigate the reallocation of resources across age and gender in a comparative European setting. Our analysis is based on the NTA methodology, NTA-data, as well as on income data from the European Survey of Income and Living Conditions (EU-SILC) and data from the Multinational Time Use Study (MTUS). The aggregate NTA life cycle deficit is introduced as a concept of an economic dependency ratio that allows for flexible age limits and age specific levels of economic dependency. We move beyond the current NTA methodology and study gender differences in the generation of income and extend our analysis by unpaid household work. We combine paid work as well as unpaid household work into a measure for total production and consumption at each age and by gender. Our results clearly indicate that a reform of the welfare system needs to take into account not only public transfers but also private transfers, in particular those that relate to services produced within the household for own consumption.

### **062. Intergenerational Transfers and the Expansion of the South African Welfare State, 1995-2005**

*Morne Oosthuizen, Development Policy Research Unit*

One of the defining features of the South African socioeconomic milieu is the stark inequalities that exist across, for example, race, gender, and location. Paired with this, high unemployment means that poverty is rife. In addressing the challenges of poverty and inequality, South Africa's post-apartheid governments have expanded the social welfare system, while prioritising expenditure on education, healthcare and housing. The effect has been a rapid increase in resource flows from government to households: growth in social spending in the first decade of democracy outstripped growth in general government expenditure and, by 2011, 30 percent of the country's population was in receipt of a welfare grant.

Using the National Transfer Account (NTA) methodology pioneered by Lee and Mason, this paper investigates the impact that this policy change has had on intergenerational transfers between 1995 and 2005. Building on earlier work that has estimated South Africa's first set of accounts (for 2005), the paper analyses the changes in private consumption and private transfers in response to this growth in public consumption and public transfers. With public transfers to both young and old increasing over time, the paper will investigate the changing patterns of net public (and private) transfers across age cohorts.

### **062. Adding unpaid work to the National Transfer Accounts for Slovenia**

*Joze Sambt, University of Ljubljana, Faculty of Economics; Janez Malacic, University of Ljubljana*

Recently the method called National Transfer Accounts (NTA) has been developed to measure economic flows across age groups. Age groups in which individuals produce more than they consume (prime age adults) are financing age groups whose consumption exceeds their production (young and elderly). The NTA are synchronized with the System of National Accounts

(SNA) and therefore they ignore production in form of unpaid work like cooking, cleaning, childcare etc. In this paper we add the unpaid work to the conventional NTA results. Based on time use data from 2000/2001 we discover that people in Slovenia spent on unpaid work 3 hours and 45 minutes per day, exceeding even the amount of time they spend on paid work (about 3 hours per day), which confirms the necessity of including unpaid work into the NTA analysis. There are large net transfers of unpaid work flowing from adults to the children, especially to the youngest ones (exceeding even the value of private transfers in form of clothing, housing, financing kindergartens etc.), and in smaller extent also to the elderly in the highest age groups.

### **063. Are countries achieving the Millennium Development Goals?**

*Iñaki Permanyer, Centre d'Estudis Demografics*

This paper uses two classes of multidimensional indices to measure countries' evolution towards the achievement of United Nations' Millennium Development Goals (MDGs). Our results suggest that improvements in the different MDGs tend to be uncorrelated among them and, on average, countries are largely off-track in their way towards MDGs achievement. This evolution has been highly uneven across countries and dimensions. While population growth is negatively associated to countries' MDGs improvement, the latter is unrelated to countries' economic growth, therefore posing a great challenge for international development agencies and national governments who aim to promote simultaneous progress in the different MDGs.

### **063. Education in sub-Saharan Africa: A New Look at the Effects of the Number of Siblings**

*Oystein Kravdal, University of Oslo; Ivy Kodzi, African Population and Health Research Center (APHRC)*

Studies examining the link between the number of siblings and children's education in Africa have given mixed results. Moreover, the potential for unobserved heterogeneity bias raises questions about how best to interpret any observed association. Using DHS data from 26 countries in sub-Saharan Africa and a multilevel multiprocess model that controls for time-invariant unobserved mother-level characteristics, we find indications that younger siblings increase the likelihood of entering primary school. However, once a child is enrolled, the number of pre-school aged siblings is negatively related to educational progression. The number of siblings older than 15 increases the chance of primary school entry and completion, but has no effect on subsequent transitions. There are also some positive effects of the number of siblings aged 6-15. Girls are more adversely affected by having young siblings than boys, but also benefit more from having siblings older than 15. Nonetheless, on the whole, the number of siblings is not an important determinant of children's education. The results underscore the need to develop detailed measures of sibling groups which capture age variations in school participation and potential contributions to production.

### **063. Maternal and Child Mortality Indicators across 187 countries in the World: Converging or Diverging**

*Srinivas Goli, International Institute for Population Sciences (IIPS)*

Recent literature on maternal and child mortality foster that world is observing a spectacular progress towards achieving MDGs 4 and 5; however, such progress is resulting into convergence/divergence across the worldwide countries is yet to answer? This study re-assessed the progress of 187 countries worldwide in terms of MDGs 4 and 5 by nuanced econometric models to identify discrepancies in such progress. The results of both parametric and non parametric convergence measures suggest that the absolute convergence in progress of MMR across the world countries is evident only in the recent period, 2000-2008. Progress in all child mortality indicators are divergent and such divergence is increasing for the recent periods. This study suggest that there is no doubt in the fact that there is a considerable progress in both

maternal and child mortality indicators. However, a mere progress does not warrant the convergence in progress across 187 countries.

### **063. Population growth, agricultural land use change and implication for food security in Meghalaya plateau, India**

*Rabi Narayan Behera, North-Eastern Hill University (Nehu); Debendra Kumar Nayak, North-Eastern Hill University*

The paper outlines regional population growth and its linkages with changes in agricultural landscape, particularly of commercial crops and its impact on food security in Meghalaya. Traditionally the tribal people in the Northeast including those in Meghalaya practiced shifting cultivation in the hill slopes and settled cultivation in the river valleys. With relatively low density of population and long Jhum (shifting cultivation) cycles, these communities could manage their livelihood. The situation changed drastically over the years due largely to phenomenal increase in population in the wake of substantive improvement in health infrastructure and declining mortality. This has made the traditional agricultural practices unviable and unsustainable. Search for alternative livelihood became inevitable. Traditional practice of Jhum is no more adequate to support a large number of people due to progressive decline in the Jhum cycle that had debilitating effects on land quality. Land degradation, soil erosion, declining fertility and harvests have a cumulative effect on the lives and livelihoods of the people. The change however has been felt by people as one of the coping strategies. The study underscores the interconnectedness of population dynamics, changes in agricultural landscape, local food systems and food security.

### **064. A multilevel analysis of factors affecting maternal care utilization among adolescent mothers in Urban India, 2007-08**

*Aditya Singh, University Of Portsmouth*

The proportion of adolescent deaths (9%) due to pregnancy or during child birth to total maternal mortality is very high in India. Although some studies on local scale are available, no study as yet has explored the factors affecting maternal health care utilization in adolescent mothers at national level. Using the data from third wave of District Level Household Survey (2007 -08), this paper examines the factors associated with the utilization of maternal healthcare services among adolescent women (aged 13 -19 years) in urban India. Bi-variate analyses including chi -square test was used to determine the difference in proportion, and multilevel binary logistic regression models were applied to understand the net effect of predictor variables on selected outcomes. About 23% of all adolescent mothers in India availed full ANC; 70% had a safe delivery and 64% had postnatal care in 2007 -08. After controlling for a number of factors, we find that the women, who are rich, older, highly educated, exposed to mass media, were more likely to utilize prenatal and natal care. These groups may be small portion of population but contribute significantly to maternal and child mortality, therefore, it is imperative to focus on such vulnerable groups in the policy.

### **064. Adolescent Internet Use and its Relationship to Cigarette Smoking and Alcohol Use in Taiwan: Findings from a Cohort Study**

*Chi Chiao, National Yang-Ming University; Chin-Chun Yi, Institute of Sociology, Academia Sinica*

While certain mass media exposure is associated with the presence of problem behaviors, little is known about the longitudinal impact of internet use on future cigarette smoking and alcohol misuse. Due to the pervasiveness of internet use among adolescents, this paper builds upon social-cognitive theoretical accounts and examines various aspects of internet use with its link to future cigarette and alcohol use. It is also argued that this longitudinal relationship may differ by gender; an attempt is made to delineate plausible internet use revealed by boys versus girls in cigarette

versus alcohol use. Data are taken from the Taiwan Youth Project, an internet use cohort who did not have cigarette/alcohol use experience at age 16 with a 4-year follow-up. Adolescent internet use are assessed by where, why, and the length of time spent using the internet. To incorporate conventional determinants with peer, individual, and family characteristics measured at 16 or younger, multivariate regressions are employed to estimate models in odds of future cigarette smoking and alcohol misuse by age 20. Results confirm that in addition to the above determinants, adolescent internet use contributes to future cigarette smoking and alcohol misuse and its relationship varies by aspects and gender.

#### **064. Determinants of adolescent mortality in South Africa, 2006 -2009**

*Nicole De Wet, University of the Witwatersrand*

Despite adolescents (10- 19 year olds) having the lowest mortality compared to older and younger age groups in the country, the mortality rate of this age-group is increasing. Prominent broad-underlying and immediate causes of death have varied very little over the period. What remains unclear is the determinants of these causes of death among South African adolescents. This paper is a study of the determinants of adolescent mortality in South Africa. Data from the South African Death Registry is used (2006- 2009). Cause-specific mortality rates and proportional mortality ratios are used. Logistic regression is then used to infer the odds of adolescent mortality by specific demographic and socioeconomic characteristics. Results paper include that occurrences of mortality due to 'Tuberculosis' and 'ill- defined and unknown causes' are high among adolescents. Further this paper has found that female adolescents are at greater odds of natural or disease mortality than males. However, females are at lower odds of unnatural and violence related causes of death. Also, marriage decreases the odds of mortality.

#### **064. Risk Behaviour Among High School Adolescents in the North West Province, South Africa**

*Ishmael Kalule-Sabiti, North West University; Acheampong Yaw Amoateng, North West University; Yaw Johnson Arkaah, North-West University (Mafikeng Campus)*

Adolescent risk taking behaviours have become important policy issues in South Africa which is faced with a myriad of social and health problems among youth. HIV prevalence rates are high, adolescent rates are among the highest in the world, substance and alcohol abuse are high among teenagers and rape cases perpetuated by boys to girls in these age groups have increased. In response to these issues, a study on Risk Behaviour Among School Adolescents was undertaken. A multi-cluster sampling was used to collect data covering 7 schools and 1065 students in Grades 9 and 11. Considering the sensitivity of the questions, need for honesty responses and the high literacy levels of the group, self-completion questionnaires were used. Logistic regressions were used to model the effects of ever had sex, frequency of sex and sexual partners. For this analysis these were reduced to binary outcomes.

Parental control and peer pressure have emerged as the strongest predictors of teenage sexual activities. Also, the roles of the family and religious institutions as protective factors have been established. Peer pressure emerged as the most important risk factor. One important observation is that youth who have accurate knowledge are more likely to take protective action.

#### **065. Race Inequality in Education and Earnings in Brazil and South Africa**

*Leticia Marteleto, University of Texas at Austin; Caitlin Hamrock, University of Texas at Austin*

Brazil and South Africa are among the most socio-economically unequal countries in the world; education is often cited as the main vehicle for alleviating or exacerbating such pervasive inequality. Equally important, Brazil and South Africa are among the largest multiracial societies in the world, with striking disadvantages in social and economic opportunities and outcomes among the non-white population. The first goal of this paper is to examine cohort patterns of

educational inequality by race in Brazil and South Africa. Both countries now witness the largest ever cohorts incorporated into the educational system; yet, despite overwhelming improvements in educational opportunity, it remains unclear whether race inequalities in earnings have declined for younger cohorts. The second goal of this paper is therefore to examine cohort changes in racial differences in earnings in Brazil and South Africa. We use data from large nationally representative household surveys (PNAD for Brazil; GHS for South Africa). To address high unemployment rates, particularly among black South Africans, and account for different propensities of reporting positive earnings, we utilize propensity score matching. Our preliminary findings suggest that white-black inequalities in earnings have persisted despite recent gains in education.

### **065. Education, Labor Earnings and the Decline of Income Inequality in Brazil**

*Sonia Rocha, Instituto de Estudos do Trabalho e Sociedade*

Brazil is well known for its high and persistent levels of income inequality. Throughout its recent economic history, under different conditions regarding policies and politics, income inequality remained high, and well above Latin American standards. However, since 1997 inequality has been declining at a rate of 0.8 per cent per year, accelerating the pace after 2001 to 1.07 percent per year, when measured by the Gini coefficient, converging to the region's average. It is often argued that the main source of Brazilian income inequality is the underlying inequality in the distribution of education. Based on empirical evidence from the National Household Survey, this paper shows how in recent years education has influenced labor income in two ways: first, via increased schooling; from 2001 on, via the reduction of inequality of schooling among workers. As a consequence, the wage gap of workers with different levels of schooling was reduced. From 1997 to 2009, reduced labor income inequality accounted for 2/3 of reduced total inequality. The fact that returns to education still remain high by international standards shows the potential of education to further reduce income inequality, as well as income poverty in Brazil.

### **065. Educational Differentials and Mechanisms in Married Women's Labor Force Transitions in Japan**

*So-jung Lim, Utah State University; James Raymo, University of Wisconsin at Madison*

This study examines several potential mechanisms underlying the recent emergence of positive relationship between educational attainment and married women's labor force attachment in Japan. I use data from a longitudinal survey collected in the 1990s and early 2000s, a period of substantial change in the context of women's work, to estimate discrete-time competing risk models for married women's labor force transitions including labor force exit, transitions between standard and non-standard employment, and reentry to the labor market. Study results indicate that recently emerging educational differentials in married women's labor force participation in Japan are mainly due to the fact that highly educated women are more likely to stay in the labor market (including standard and non-standard employment), not because they are more likely to return to the labor force. Study findings also show that it is those with the lowest educational attainment who are more likely to reenter the labor force usually in non-standard jobs with few benefits and little room for advancement. In addition, women's own income, work orientation, and job characteristics such as occupation, firm size, and public sector employment play important roles in mediating relationships between education and labor force transitions.

### **065. Geographic distribution of talent in urban Mexico and its expression in patterns of specialization and / or diversification.**

*Elvia Martinez-Viveros, CENTRO DE INVESTIGACION EN GEOGRAFIA Y GEOMATICA ING JORGE L TAMAYO A.C.; Rodrigo Tapia-McClung, Centro de Investigación en Geografía y Geomática (Ing. Jorge L. Tamayo), A.C.*

The geographic distribution of Mexican highly qualified labor force, its expression in forms of specialization, diversification or complementarity and their impact in the performance of cities are relevant issues, from a public policy and an academic point of view. For the analysis of the geographic distribution of human capital (hc) in Mexico we depart from a functional structure derived by the interactions of 56 cities placed in 16 regional networks. We approach these as labor markets and people engaged in knowledge-intensive (ki) occupations as part of their high-level hc. We classify cities and networks by the relevance of their ki occupation structure in three types: balanced hubs, specialized hubs and emergent specialization. We also approach hc accumulation in terms of educational achievement and its evolution overtime and classify cities as outstanding, at risk, pre-emergent and deteriorated. We find that, as aggregates, diversified hubs are an 'at a risk' position, specialized hubs of cities show an emergent outstanding position but the corresponding networks are 'at risk'; and the emerging aggregate with the greater shortage of highly educated hc, show a great dynamism in its formation. We finally analyze the association of these types with indicators of social and economic performance of these urban areas

#### **066. A re-examination of estimates and causes of maternal mortality for South Africa with particular focus on provincial levels**

*Eric O Udjo, University of South Africa; Pinky Lalthapersad-Pillay, University of South Africa*

One of the problems in monitoring maternal mortality is lack of reliable estimates. Several studies have provided estimates of maternal mortality from pregnancy related deaths on South Africa utilizing Census and survey data but these estimates have methodological weaknesses. This study re-examines maternal mortality from pregnancy related deaths at national and provincial levels in South Africa and provides insight into the causes of the maternal mortality deaths. Data from the 2001 census, 2007 Community survey and death registrations were utilised. Information on household deaths including pregnancy related deaths were collected. Direct and indirect methods were utilised to estimate maternal mortality ratio. The results indicate that maternal mortality ratio increased from around 150 per 100,000 live births in 1992-1998 to about 764 per 100,000 live births in 2007 and ranged from 102 per 100,000 live births in the Western Cape Province to 1,639 in the Eastern Cape Province in 2007. Maternal infections and parasitic diseases as well as other maternal diseases complicating pregnancy, childbirth and the puerperium are the major causes. Despite strategies to improve maternal and child health, maternal mortality is increasing and remains a public health challenge in South Africa.

#### **066. Towards harmonization of maternal mortality estimates in Latin America. Findings of the pilot study on eight countries.**

*Maria-Isabel Cobos, UN Economic Commission for Latin America and the Caribbean (ECLAC / CEPAL); Magda Teresa Ruiz-Salguero, Universidad Externado de Colombia*

National statistics on maternal mortality vary considerably from international estimates: national figures for 2010 showed 5,670 maternal deaths in Latin America, substantially fewer than the 7,400 estimated by UNMMEIG or the 8,263 estimated by IHME. In Latin America, social and geographical inequality results in uneven coverage and quality of vital registration, and insufficient metadata to assess reliability. To facilitate an understanding of the methods, and to assist countries in the conciliation of national estimations with external sources, CELADE/ECLAC drafted a document comparing MMEIG, IHME and country estimates; explaining the approaches for measuring maternal mortality; and shedding light regarding interpretation of the multiple estimation sources. Further, CELADE is working with eight pilot countries to explore data quality, assessments and adjustments. This paper reports findings of the pilot study, including a review on the coverage and quality of vital statistics; the state of the art of maternal mortality statistics at the national level; and an examination of discrepancies between sources, in the light of available

metadata. Conclusions will be discussed with country stakeholders, resulting in recommendations on coordination, harmonization of figures and improvement of maternal mortality measurement.

### **066. What Caused, the decline in Maternal Mortality in India? Evidences from Time Series and Cross Sectional Analyses**

*Abdul Jaleel Chirutha Paramban, International Institute for Population Sciences (IIPS); Srinivas Goli, International Institute for Population Sciences (IIPS)*

As results of spectacular progress in decline of global Maternal Mortality Ratio (MMR), India came to limelight for its outstanding contribution to such decline. Although, studies in India have analysed the causes of MMR but, these studies have not investigated the causes of decline of MMR in India. The findings of this study foster that the improvement in state income, reduction in poverty and fertility contributes greater than institutional deliveries to the decline of MMR in India. Further, the MMR is converging across states of India with greater progress in less developed states. By examining the causes of decline in MMR, this study set priorities in socioeconomic and health policy to be focused to curtail the MMR further to achieve the millennium development goal5 and the standards set by other developed countries.

### **067. Linking Policies to Reproductive Health Programs and Outcomes: The Importance of the Policy Implementation Space**

*Karen Hardee, Futures Group; Laili Irani, Population Reference Bureau (PRB); Mariela Rodriguez, Futures Group*

Policy is integral to the success of any health program, including sexual and reproductive health programs. Yet, most policy literature focuses on policy development. Literature on program implementation rarely focuses on the role of policy. Based on a review of academic and programmatic/applied literature, we have developed a conceptual framework linking health policies to health systems and outcomes. The strength of this conceptual framework is the articulation of the importance of the space between the development of a policy and the implementation of a program. Using examples from the field, we identify the challenges in policy implementation that affect programs and health outcomes. Our analysis also identifies gaps in the literature pertaining to the areas of sexual and reproductive health policy implementation, and monitoring and evaluation. We also recommend the initiation of evaluation studies examining the complete policy process linking health policies to health systems and to health outcomes.

### **067. Evaluating the Impact of Abortion Restrictions and Drastic Budget Cuts for Family Planning in Texas**

*Joseph E Potter, University of Texas at Austin; Kristine Hopkins, University of Texas at Austin; Kari White, University of Alabama At Birmingham; Daniel Grossman, Ibis Reproductive Health; Amanda J Stevenson, The University of Texas at Austin; Celia Hubert Lopez, University of Texas at Austin; Abigail R.A. Aiken, University of Texas at Austin*

For reproductive health services, evaluation usually assesses the impact of a project seeking to increase service supply. However, as a result of recent legislative initiatives passed in Texas to curtail the availability of abortion through a two-thirds reduction in public funding for family planning, the subject of the evaluation described here is just the opposite—to assess the impact of measures intended to drastically reduce the supply of these services. We describe the 2011 Texas legislature’s initiatives, the key components of our comprehensive three-year evaluation that will attempt to assess the impact of this legislation on family planning and abortion services, unintended pregnancies, abortions and births, and highlight some of our initial findings. In the first of two waves of interviews with leaders of organizations that provided publicly funded reproductive health services, we found that 22% of the 240 clinics were closed after the funding cuts and an additional 16% of clinics reduced hours. Women in focus groups across Texas stated

that it was difficult for them to pay newly instated fees for services, which exacerbated pre-existing barriers to obtaining reproductive health care. We also review some of the main challenges we face in carrying out this evaluation.

### **067. Policy on reproductive health care for ethnic minorities in Vietnam: legal documents and its realization**

*Bich Ngoc LUU, Institute for Population And Social Studies; Thi Thieng Nguyen, institut de population et la societe studies de universite nationale economique (IPSS-NEU); Thi Hanh Bui, Institute for Population and Social Studies - The National Economics University*

This paper is based on the results of the study “Evaluation the implementation of reproductive health care (RHC) policies for ethnic minorities in Vietnam” that was implemented in 2008 by the Institute for Population and Social Studies – NEU required by UNFPA. This study used a combination of three research methods (desk-study, quantitative survey, and qualitative survey). The report indicated that the strength of RHC policies is to clearly express the orientation of incentive RHC for ethnic minorities by setting up specific objectives and solutions towards better condition of human resources, natural and financial resources in the mountainous areas. However, there are some weaknesses: inconsistency and vagueness in terms of subjects of the policies, loopholes in policies, some infeasible objectives, illogicality, contradiction among policies, general criteria, overlapping, and some problems in policymaking procedure. The gaps of policy implementation related to issuing guidance for policy implementation, the dissemination of RHC policies to people, RHC models, human resources, essential health equipment and medicines, regular income-expense for the commune medical centers, are also found out. This paper gave some recommendations to enhance the quality of RHC services for ethnic minorities.

### **067. The role of political will and commitment in improving access to family planning – Case studies from Eastern and Southern Africa**

*Violet I Murunga, African Institute for Development Policy (AFIDEP); Ruth N Musila, African Institute for Development Policy (AFIDEP); Rose N Oronje, University of Sussex; Eliya Msiyaphazi Zulu, African Institute for Development Policy (AFIDEP)*

The study explored the origin, architecture and role of political will in increasing contraceptive use in three sub-Saharan African countries - Ethiopia, Malawi, and Rwanda – that have stood out for phenomenal increases in contraceptive use between 2000 and 2012.

We assessed factors that have propelled changes in the attitudes of some political leaders to champion family planning; how such political will has manifested in different contexts; and how political will impacts the policy and program environment.

We use mixed methods, including desk review of policy and program documents and stakeholder interviews. The study findings demonstrate that political will for family planning evolved due to increased availability of evidence that demonstrated that family planning is central to achieving the MDGs, and that high population growth undermines efforts to transform the economies of developing countries.

We postulate that lessons from this study will help galvanize efforts to improve access to family planning services in other African countries where little progress is being made.

### **068. Le dernier mois de l'existence : les lieux de la fin de vie et de la mort en France**

*Sophie Pennec, Institut National d'Études Démographiques (INED); Alain Monnier, Institut national d'études démographiques; Joëlle Gaymu, Institut National d'Études Démographiques (INED); Françoise Riou, CHU Rennes et Université de Rennes I; Silvia Pontone, CHU Robert Debré (AP-HP) et INED; Aubry Régis, CHU Besançon et Observatoire national de la fin de vie*

Si les lieux et causes de décès ont fait l'objet d'une abondante littérature, les circonstances de la fin de vie, phase ultime de l'existence, restent largement inexplorées en France. A ce stade de la

vie, l'hospitalisation, le maintien à domicile ou en maison de retraite peut être conçu comme le résultat d'une sélection, découlant à la fois de choix et de contraintes pour les patients et leur entourage. L'enquête « Fin de vie en France », reposant sur un échantillon représentatif de décès de décembre 2009 et sur lesquels on a interrogé les médecins certificateurs, permet de connaître le parcours des personnes durant le dernier mois de leur vie. Durant ce dernier mois, la proportion de personnes hospitalisées va doubler et conduire 2 patients sur 3 à finir ses jours à l'hôpital. L'hospitalisation en provenance du domicile est le changement le plus fréquemment observé, les personnes vivant en maison de retraite ou prises en charge à l'hôpital un mois avant leur décès, ayant une forte probabilité d'y finir leurs jours. L'âge, le sexe, la pathologie dont les personnes sont atteintes et l'objectif du traitement influencent fortement la probabilité de rester sans discontinuer dans le même lieu de vie.

### **068. Modal Age at Adult Death : Lifespan Indicator in the Era of Longevity Extension**

*Shiro Horiuchi, Cuny Institute for Demographic Research; Nadine Ouellette, University of California, Berkeley; Siu Lan Karen Cheung, The University of Hong Kong; Jean-Marie Robine, Institut National de la Santé et de la Recherche Médicale (INSERM)*

This paper examines and demonstrates importance of the modal age at adult death (M) in the measurement and analysis of longevity extension. First, logically and conceptually, M is a highly appropriate measure of longevity, as it is reasonable to measure the longevity of a population as the location of “old-age death heap” in the age distribution of deaths, and M seems the indicator that most clearly represents the heap. Secondly, with empirical data, simulations, and mathematical proofs, it can be shown that life expectancies (including life expectancy at birth and life expectancy at an early old age such as 65) tend to fail to properly capture changes in the location of the old-age death heap. Thirdly, it is also shown that longevity differentials are more properly reflected in differences in M than differences in other widely-used indicators of mortality and lifespan. Fourthly, M plays central roles in major models of age patterns of adult mortality such as Gompertz, logistic, and Weibull models. Fifthly, although M may not be directly determined from erratic mortality data, the recently developed method for deriving M from the P-spline-smoothed mortality curve based on penalized Poisson likelihood is highly effective in estimating M.

### **068. The senescence of generations across time and space**

*Gustavo De Santis, University of Florence; Giambattista Salinari, University of Sassari (Italy)*

At adult ages  $x$ , the force of mortality increases more or less exponentially with age, and the parameter associated with age, Beta, can be used to gauge the rate of senescence (ageing) of a generation. The hypothesis has recently been advanced that, with rare exceptions, the rate of senescence at the individual level is constant through space and time, and not far from 0.1. We contribute to this discussion in two ways: first, we propose a new and simpler method to estimate the rate of senescence Beta when frailty and period effects operate, and, secondly, we offer a few empirical estimates for Beta, for various cohorts, in different countries (all data taken from the Human Mortality Database). The transformation that we suggest leads to a linear estimation, which is considerably simpler than all the others we are aware of, characterized by non-linear equations, numerical recursive likelihood maximization, etc. Our estimates of the rate of senescence Beta are all very close to 0.1, but most of the differences that we detect (e.g. by country) are statistically significant, and there appears to be a decreasing trend of Beta over time.

### **069. Population and economic growth in the Republic of Korea**

*Ronald D. Lee, University of California, Berkeley; Andrew Mason, University of Hawaii At Manoa*

Today, the Republic of Korea is a rich, modern, industrial economy with high life expectancy, low fertility, near zero population growth, and concerns about rapid population aging and population decline. This is a remarkable and dramatic change from its situation in the 1950s when people were impoverished, mortality conditions were very poor, fertility rates were high, and population growth quite rapid. The purpose of this paper is, first, to discuss how changes in population influenced Korea's economic transformation and, second, to consider the challenges that will arise in the coming decades due to demographic factors. The paper draws heavily on previous research and estimates based on National Transfer Accounts data for Korea that quantify economic flows across generations.

### **069. South Korea's remarkable half century of demographic and human capital growth: what of the future?**

*Gavin W. Jones, National University of Singapore*

In 1960, South Korea's population and economic indicators were roughly equivalent to those of Thailand, the Philippines and Myanmar. By 2010, it was in a different league from all of them. This was a remarkable story of economic success, greatly facilitated by fertility control and human capital development. South Korea is now one of the most highly urbanized countries on earth, with educational performance indicators second to none. But its success has not been without major costs. South Korea has the highest suicide rate among OECD countries; its fertility rate is at an unsustainably low level; it faces a severe contraction in its labour force without a substantial immigration program. The paper will suggest some policy approaches to these issues.

### **069. South Korea's Transition from Developmental to Post-Developmental Regime of Demographic Changes**

*Kyung-Sup Chang, Seoul National University*

Since the early 1960s, South Korea has undergone extremely rapid and fundamental transformation in both demographic and developmental dimensions. The rates of migration/urbanization, fertility, and mortality all kept changing at such unprecedented and incomparable paces that also characterized those of economic growth, industrialization, proletarianization, etc. This dual transformation was no coincidence as the country's developmental experiences directly involved critical demographic conditions, processes, and consequences. Conversely, South Korea's recent economic crisis and restructuring have both required and caused drastic reformulation of human resources, family relations, and reproductive behaviors, so that earlier demographic trends have been further accelerated in some aspects and suddenly slowed down or reversed in other aspects. South Korea's literally compressed demographic changes under a socially complex developmental context offer several significant historical and/or theoretical implications, including (1) spatial demographic imbalances due to intergenerationally divided urban migration, (2) fertility decline with alternating gender asymmetry, (3) demographic individualization under sustained familialism, (4) socioeconomically discrete two-stage population aging, and (5) constant realignment between individual life course and family life cycle. As these demographic transformations tend to fundamentally undermine the hitherto taken-for-granted social conditions for national economic management and state governance, the country aggressively explores strategic measures for reversing or relieving demographic deficits and imbalances – largely in terms of bolstering reproductive citizenship for women, both locally (i.e., offering fertility benefits and reducing childcare burdens for native women) and globally (i.e., inviting foreign brides for reproductive labor in urban peripheries and villages).

### **070. Tools for demographic estimation**

*Tom Moultrie, University of Cape Town*

Presents the online manual "Tools for demographic estimation" an IUSSP project funded by UNFPA to revise and update Manual X. The materials consist of a series of (mostly) static webpages describing and documenting the tools and methods of demographic estimation from limited, deficient and defective data. The material is organised thematically first, and then by the kinds of data that may be available. Where appropriate, downloadable spreadsheets are provided that allow users to apply the methods to their own data. Forums are available to discuss and debate methods and results, and FAQs describe how to use the site <http://demographicestimation.iussp.org/> in more detail.

### **070. Population Analysis for Policies and Programmes**

*Lynda Clarke, London School of Hygiene And Tropical Medicine*

Presents distance training modules produced by the London School of Hygiene and Tropical Medicine for an IUSSP-UNFPA funded project to develop up to 130 hours of instructional materials to support teaching as well as independent study in the population sciences.

### **070. Toward an harmonized second edition of the Multilingual Demographic Dictionary: the Demopædia project**

*Nicolas Brouard, Institut National d'Études Démographiques (INED)*

The Demopædia project has set, as a first goal, to give access to demographers all editions of the Multilingual Demographic Dictionary published since the 50's. Computerization has shown that if the first editions were consistent over the 1100 concepts, very large gaps, most often due to omissions undermined the overall quality of the second edition of the multilingual dictionary, 1492 concepts for the French (1981), 1475 for the English (1982), 1495 Spanish (1985), 1555 for the German (1987). The harmonization process consists in maximizing the corpus to 1581 concepts. The Communication will review the volumes already harmonized in French and Italian, published or forthcoming, as the new Asian languages that emerged after the workshops of Paris (2007) and Chiang Mai (2012). If we may regret a modern third edition, this standardization process is a necessary step. The availability of all texts and cross-languages indexes on any kind of media from paper book up to digital tablets is an asset. This harmonization phase is also an opportunity for the community of demographers to prepare the third edition by proposing a succinct definition of new terms or expressions which are emerging on the Open Encyclopedia Population platform both in English and in about 20 languages.

### **070. Demography Video Series**

*James Carey, University of California*

Presents the importance of video capture of lectures and seminars in training drawing on the experience of the University of California Committee that created and published a roadmap for video capture seminars. A similar plan is now under way for Demographic Research. This presentation will provide an overview of the revolution in instruction that is occurring in U.S. and world, why demographers need to get on board, and encourage everyone to contribute to Demographic Research video collection from seminars in their own departments and methods videos they create.

## **072. Changes in longevity and health status in Kerala: Are they leading to the advanced stage?**

*Benson Thomas M, Institute for Social And Economic Change; Kuriath James, Institute for Social And Economic Change*

During the last century, Kerala witnessed drastic mortality reduction and high improvement in longevity. This achievement is often compared with that of developed countries. However, how far the early advantages in mortality reduction have further enhanced the health status of the people in Kerala remains unknown. In most developed countries, advanced stage of mortality reduction and further increase in longevity was achieved mainly due to mortality shift from adult, older to oldest ages (Olshansky and Ault 1986). However, such exploration on advanced mortality changes are lacking in Kerala. Considering this gap our study focused on changes in longevity and health status in Kerala. We used the methodology given by Olshansky and Ault in 1986, by decomposing the changes in longevity among different age groups (gender and spatial), and causes of deaths. We also estimated Health Adjusted Life Expectancy to understand health status along with longevity in Kerala. We used data from sources like; Census, CRS, DHS and survey data from SRS, MCCD, CDS-R, and NSSO. The paper concludes that though healthcare policies in Kerala are sufficient to address the health issues of infants, children and mothers in reproductive ages, the state also should make necessary policy initiatives to address the health problems of adults especially the males

## **072. Old age mortality in Eastern and South-Eastern Asia**

*Danan Gu, United Nations; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section); Kirill Andreev, United Nations Population Division (Population Estimates and Projections Section); Nan Li, United Nations Population Division; Thomas Spoorenberg, United Nations Population Division; Gerhard Heilig, United Nations, Population Division*

We present data from the 2010 Revision of the World Population Prospects on old age mortality in terms of life expectancy at age 65, age-specific death rates for 13 countries/territories in the region (Cambodia, China, Hong Kong SAR, Indonesia, Japan, Republic of Korea, Myanmar, Malaysia, Mongolia, Philippines, Singapore, Thailand, and Viet Nam) from 1995 to 2010, and data from the WHO on cause-of-death for six countries (China, Hong Kong, Japan, Republic of Korea, Singapore and Thailand) from 1980 to 2010. While mortality transitions in these populations took place in different times and under different political systems, levels of socioeconomic development and living environment, changes in their age patterns and sex differentials in mortality have shown certain similarities: women witnessed a greater decline than men and young elders had a larger decline than the oldest-old. In all six countries examined for cause-of-death except Thailand, most of the increases in life expectancy at age 65 in both men and women were attributable to declines in mortality from stroke and heart diseases. The findings shed light on the relationship between epidemiological transition, changing age patterns of mortality and improving life expectancy in these populations.

## **072. Causes of Death and Mortality Transition in India**

*Suryakant Yadav, Indicus Analytics Pvt. Ltd.; Perianayagam Arokiasamy, International Institute for Population Sciences*

According to SRS, since 1980s, mortality rates have been declining continuously among the Indian adult and older ages. Alongside, the morbidity rates increased remarkably during the last two decade. In the current state of mortality transition, country is witnessing the unique phenomena of low mortality and high morbidity during the last two decade. Kumar (1993) addressed low mortality and high morbidity in Kerala, which seems to be true for India and bigger states in present demographic scenario. During 1995/96-2004, the prevalence rate of chronic

NCDs increased four-folds than other categories of diseases. Consequently, chronic NCDs were responsible for major share of deaths than any other major categories of causes of death (Visaria 2004). As a result, the mortality transition progresses with greater pace during the last two decade. Modal age at death (M) increased linearly by 5 years for both females and males ( $r^2=0.9515$  for females and  $r^2=0.9020$  for males). Significant increase in modal age at death ascertained the dominance of old age mortality over the adult age mortality. Among the demographically advanced states, Kerala is foremost where old age mortality has been in dominance since 1970s compared to less advanced state say Uttar Pradesh, where the old age mortality has been in dominance since 1990s.

### **072. Does proximity to health facilities improve child survival? New evidence from a longitudinal study in rural Tanzania**

*Almamy Malick Kante, Columbia University; Stephane Helleringer, Columbia University; Sigilbert Mrema, Ifakara Health Institute - IHI; Francis Levira, Ifakara Health Institute - IHI; Honorati Masanja, Ifakara Health Institute - IHI; Rose Nathan, Ifakara Health Institute, Dar Salaam; John Steven Noronha, Ifakara Health Institute; Christine E Chung, Columbia University; Amon Exavery, Ifakara Health Institute; Ahmed Hingora, Ifakara Health Institute - IHI*

Distance to health facilities is often cited as a major barrier limiting access to care in sub-Saharan and other developing countries. There are however limited data on the causal effects of distance to facilities on child survival. This paper uses unique longitudinal data collected in a rural district of Tanzania to test whether enhanced proximity to health services arising from investment in dispensaries contributed to the rapid decline in under-five mortality recently observed in Tanzania. Data on births, deaths, migrations, SES and geographic data on households and facilities have been recorded every 120 days since 1999 ( $n \approx 85,000$ ). We use multivariate analysis to measure the causal effects of distance to health facilities on child survival and to test interactions between distance to health facilities and maternal education and households' SES. Initial results indicate that, from 2000 to 2010, child mortality declined close to 40% (from 115 to 70 per 1000). The distance to the closest health facility remained a strong determinant of child survival, even after adjusting for endogeneity biases. The development of community-based primary health care can improve health outcomes and can increase equity by offsetting the detrimental effects of low maternal education, household poverty and distance to health facilities.

### **073. Contextual Conditions and Childbearing in Cohabitation across Europe**

*Trude Lappégard, Statistics Norway; Sebastian Klusener, Max Planck Institute for Demographic Research; Daniele Vignoli, University of Florence*

Premarital cohabitation and childbearing in cohabitation have increasingly gained ground across Europe. The aim of this paper is to investigate how contextual factors, e.g. societal values and economic conditions, relate to variation in childbearing in cohabitation, controlling for individual-level characteristics. Analyses are based on harmonized survey data from more than 44 thousands individuals nested in 126 sub-national regions nested in 15 countries. We propose a 3-level hierarchical model predicting the probability to get the first child in cohabitation vs. marriage. Our results show that contextual-level variation is highly relevant for understanding variation in childbearing in cohabitation. They suggest that across countries perceptions on the economic autonomy of women are highly positively associated with childbearing in cohabitation. This lends support to the Second Demographic Transition Framework. On the other hand, we find within countries a positive association between unemployment rates and childbearing in cohabitation, which indicates a pattern of disadvantage.

### **073. The Problematic Process of Family Formation in Italy. A Comparison Before and After the Beginning of the Global Crisis**

*Emiliano Sironi, Catholic University (Milan, Italy); Alessandro Rosina, Catholic University Milan; Giulia Rivellini, Università Cattolica del Sacro Cuore*

Leaving the family of origin and entering into parenthood are two critical steps in the family formation process. Italy, as it is well known, is a country characterized by very low fertility and strong delay in starting an independent life. Using the data from the survey “Critical aspects in the work life course in a gender perspective” carried out by the National Institute of Statistics (ISTAT) before the global economic crisis (2007) and the data from the survey “Youth Project” carried out in the mid-2012 by the Toniolo Institute for Advanced Studies (Catholic University, Milan) and IPSOS, we analyse a common sample of Italian young adults aged between 21 and 29, in order to evaluate the effect of the Great Recession. Our study focuses on both the intentions of becoming autonomous from the family of origin and of entry into parenthood. We found empirical evidence of a relevant impact of the economic crisis on fertility expectations but not on the intentions of leaving the parental home.

### **073. Family Background, Childhood Disadvantage, and Unintended Fertility**

*Dohoon Lee, New York University; Paula S England, New York University*

In the U.S., most research on unintended fertility tends to address differences by family background and the sociodemographic contexts in which unintended births occur. However, little is known about the mechanisms by which family background is associated with unintended childbearing. In this study, we propose childhood disadvantage as a key mediating factor that explains the family background gradient on unintended fertility. Drawing upon the life course and human capital formation literature, we identify four dimensions of childhood disadvantage: economic resources, family structure, parenting quality, and self-regulation. Using data from the Children of the National Longitudinal Survey of Youth and event history models, this study examines the relative role that each dimension of childhood disadvantage plays in linking family background to unintended fertility.

### **073. Regional analysis of community context of African fertility change**

*Clifford Obby Odimegwu, University of the Witwatersrand; Sunday A Adedini, University of the Witwatersrand, South Africa & Obafemi Awolowo University, Nigeria; Nkechi C Obisie-Nmehielle, International Organization for Migration (IOM)*

Anthropological explanations of demographic outcomes have emphasized the need to understand how community structures contribute to those outcomes. Studies on fertility dynamics in Africa have focused on micro-level factors at the expense of the community context. Using the most recent Demographic and Health survey data from Nigeria [West Africa], Kenya [East Africa], Egypt [North Africa], Cameroun [Central Africa] and Zimbabwe [Southern Africa] and multilevel modelling technique, our study demonstrate that there is significant community effects on African fertility patterns, even after controlling for a number of individual factors such as age, education, religion and ethnicity. The paper discusses the theoretical and practical implications of these findings to understanding emerging sub-saharan African fertility patterns.

### **074. Same-sex couples and same-sex unions in Europe**

*Maks Banens, Université Lyon 2*

Most West-European countries recognize same-sex marriage and/or partnerships. Taken together as same-sex union registration (SSUR), this paper proposes a comparative study of European SSUR rates. It describes differences between low and high rates, male and female participation, and other contrasts. It brings arguments for understanding the differences using national demographic statistics and in-depth interviews with same-sex couples in twelve European

countries. The paper suggests individualization has paradoxical effects on SSUR: it facilitates legal recognition, but goes with low registration rates. Second, it suggests high feminist values have equally paradoxical effects. Strongly opposed to SSUR at the beginning, lesbian couples took major advantage of it some year later in order to found families. Nevertheless, the overall effect is negative; frequencies remain low in feminist environments. Third, it suggests that high visibility of LGBT communities tends to turn legal recognition into national pride, shared by mainstream media. This “triumphant homosexuality” features high SSUR rates. Only French rates are higher, taking advantage of both homosexual visibility and strong family ties. The non-traditional character of the Pacs seems well adapted to this double-sided adherence.

#### **074. Same-sex marriages and partnerships in two pioneer countries, Canada and Spain**

*Clara Cortina, Universitat Pompeu Fabra; Benoît Laplante, Institut National de la Recherche Scientifique (INRS); Ana Laura Fostik, Institut National de la Recherche Scientifique (INRS); Teresa Castro Martin, Consejo Superior de Investigaciones Científicas (csic)*

The legalisation of same-sex marriages in 12 countries around the world, together with the legal recognition of same-sex partnerships in other 21 countries has considerably changed the marriage institution worldwide (Cherlin 2004). Some authors consider that same-sex marriage is not only a major legal change but also a real new social phenomenon (Chamie and Mirkin 2011). Nevertheless, the difficulties in enumerating same-sex couples with available official data (Festy 2007) make it difficult to evaluate really the incidence of same-sex nuptiality. In this paper, we focus on Canada and Spain, two countries that legalized same-sex marriage in 2005, just after the two pio-neers, Belgium and The Netherlands. First, we review previous literature in order to discuss the limits of enumerating same-sex couples with census data and marriage records. Second, and taking these limitations into account, we try to understand how prone are gays and lesbians to marry when they have the choice to do so by comparing the incidence of heterosexual and homosexual non-marital cohabitation. Third, we analyse the socio-demographic profiles of same-sex partners and spouses.

#### **074. Coming out in the 2010 census: Same-sex couples in Brazil and Uruguay**

*Ana Maria Goldani, University of California Los Angeles; Albert Esteve Palos, Centre d'Estudis Demogràfics; Anna Turu, Centre d'Estudis Demogràfics*

Same-sex couples are modestly but increasingly contributing to family diversification in many developed societies. In this paper, we present evidence on the demographics of same-sex couples and their families in South America. We focus on Brazil 2010 and Uruguay 2011, the first countries in the region to include an item on same-sex partnerships in their last census questionnaires. We examine how partnered gays and lesbians differ from partnered heterosexual men and women on issues like their geographic distribution, income, education, race and family structure. Inspired by findings from the US, we test the hypothesis of gay and lesbian couples as monolithic and stereotypes of high educated, wealthy, childless and urban individuals. First findings nevertheless seem to fit the stereotypes. We discuss the extent to which gay and lesbian couples may be underreported and whether selection into union formation and into self-reporting accounts for most of the observed socioeconomic profile.

#### **074. Patterns of Gay Male and Lesbian Partnering in the Metropolitan and Micropolitan Areas of the United States in 2010**

*Dudley L. Poston, Texas A&M University; Yuting Yu-Ting Chang Chang, Texas A&M University*

In this paper we use the recently released 100 % data from the 2010 Census to analyze patterns of gay male partnering and lesbian partnering in the metropolitan and micropolitan areas of the United States. We first used census method to adjust the number of same-sex household due to the sex miscoding problem and then develop indexes of gay male partnering and lesbian partnering for

every one of the 374 metropolitan areas and 581 micropolitan areas of the United States in 2010. We next describe and relate the partnering patterns separately in the metropolitan and micropolitan areas and compare their spatial patterns with those of heterosexual married and unmarried partners. We then test various hypotheses relating characteristics of the metropolitan areas and the micropolitan areas with the gay male and lesbian partnering rates.

**075. Who profits from Germany's culture of welcome? The impact of changing opportunity structures on labour market integration of new immigrants**

*Andreas Ette, Federal Institute for Population Research (BiB); Lenore Sauer, Federal Institute for Population Research; Rabea Mundil-Schwarz, Federal Statistical Office*

As many industrialised countries will be affected in the next decades by the consequences of demographic change, governments increasingly tap into the source of immigrants as a chance to meet their labour market needs. Also Germany has started to reform its immigration and integration regime over the past decade. However, little information exists on the impact of changing opportunity structures on the labour market integration of newcomers. Traditionally, the issue of how immigrants fare in their host countries has been studied either from an intergenerational perspective – comparing different generations of immigrants – or from an individual perspective – analysing trajectories and sequences of migrants' labour market integration. Studies concentrating on the trend of labour market integration, instead, are largely missing. Based on micro-census data from 1996-2010, the paper, for the first time, analyses how recent institutional changes of Germany's immigration and integration regime have affected the performance of newcomers. Besides established human and social capital theories it therefore integrates institutional variables by separating two groups of new immigrants – nationals from other EU member states and third country nationals – whose access to the labour market has been affected largely by recent policy reforms.

**075. Immigration, transnationalism and household labour dynamics**

*Min-Jung Kwak, York University; Ann H. Kim, York University; Eunjung Lee, University of Toronto; Sung Hyun Yun, University of Windsor; Wansoo Park, University of Windsor; Samuel Noh, University of Toronto*

The transformative nature of migration on families, and in particular, on couples, is well-documented. During the post-migration period, couples re-negotiate household responsibilities within a cultural and structural context. In this paper, we focus on the effect of migration on the gendered nature of domestic labour examining changes in four areas (chores, finances, maintenance and childcare). Our sample includes transnational and intact migrant Korean couples using data from the Toronto Korean Families Study – 2011 Survey. Preliminary results show that prior to migration, couples were similar in the allocation of household responsibilities. However, after migration there were significant differences between the two types of couples with intact migrant couples following a less gendered form of household organization.

**075. Inter-marriage among Arabs in the United States: Patterns, Causes and Significances**

*Andrzej Kulczycki, University of Alabama At Birmingham; Peter Lobo, New York City Dept. of City Planning*

Inter-marriage is an important indicator of assimilation and identification and may be considered a force of integration. We use data from the 2007-2011 American Community Survey to examine inter-marriage among Arab Americans and provide limited comparisons with our earlier findings based on 1990 census data. The topic is of special interest given the impact of the events of 9/11 for this population. The strong socioeconomic position of U.S.-born and foreign-born Arabs would lead us to hypothesize that, in accordance with the basic assimilation hypothesis, Arab Americans are likely to out-marry at high rates. We examine in- and out-marriage rates for Arab

men and women by socio-economic characteristics, and employ logistic regression to analyze the influences of acculturation (including place of birth, partial Arab ancestry, and English language proficiency), structural assimilation (education, income and occupational skill level) and cultural assimilation (ethnicity/major ancestry group) on the likelihood of out-marriage. Provisional findings show that Arab Americans continue to have high intermarriage rates and that men and the native-born are more likely to outmarry. The implications of Arab intermarriage are discussed, especially for the ethnic identity of children of such couples.

#### **075. Remittance behaviours of foreigners in Italy**

*Annalisa Busetta, University of Palermo; Valeria Cetorelli, London School of Economics; Manuela Stranges, Università della Calabria*

This paper intends to figure out why immigrants remit, what characteristics they have and, in particular, which of these individual characteristics influence (and in what sense) their remittance behaviours. In particular, it aims to verify the existence of a "time effect" during the migration process. The time effect supposes that the propensity and amount of remittances become less consistent as far as the immigrant integrates into the host country and the ties with the country of origin become less intense. In practice, according to this hypothesis, the evolution of the migration plan towards stabilisation in the new country, rather than to return home, would lead the migrant to invest more humanly and economically in the host country, while reducing his emotional and economic commitment to the family left in the country of origin. We use the 2009 IT-Silc survey "Reddito e condizioni di vita delle famiglie con stranieri" covering around 6,000 households with at least one foreigner member. This survey provides many details on foreigner's characteristics, remittances attitudes and return plans, and allows us also to consider the composition of the family both in place of origin and of destination. Propensity to remit and amount of remittances are both analysed through the application of a zero/one inflated beta model.

#### **076. Do they look for informal jobs? -- Migration of the working age in Indonesia**

*Elda L. Pardede, University of Indonesia; Rachmanina Listya, LPI Dompot Dhuafa*

Characteristics of informal activity that are highly flexible in terms of working hours, barrier to entry, mobility, capital and skills requirement, have made informal jobs attractive for migrant workers in developing countries. Informal jobs are also theoretically claimed as a temporary position or transition for migrants who seek to work in more certain, formal jobs. Using individual's jobs and migration history of adults obtained from the 2007 IFLS data from 2000-2007, this study aims to analyse how migration affects individual's tendency to work in informal jobs by measuring the immediate effect of migration on job status. The result of clustered multinomial logit regression shows that migrants are less likely to work in informal jobs relative to formal jobs compared with non migrants. This result contradicts the notion that migration is an act of looking for jobs with high uncertainty. It may also indicate that temporary positions before the formal jobs are not what the adult migrants in Indonesia are looking for. But it also opens opportunities for further study to assess whether by employing the more accurate definition of informal jobs and by disaggregating migration by reasons to migrate, results may confirm that migration is positively related with informal jobs.

#### **076. Inter-state migration and regional disparities in India**

*Kailash Chandra Das, International Institute for Population Sciences (IIPS), Mumbai; Subhasis Saha, International Institute for Population Sciences (IIPS), Mumbai*

The main objective of this paper is to study the spatial pattern and levels of inter-state migration and to understand how regional disparities in development influences inter-state migration pattern in India. This study is based on 1991 and 2001 census migration data. In this analysis, two rates namely in-migration and out-migration rates have been computed separately for both males and

females. Statistical method of correlation and regression has been used to find the linkage between regional disparities in development and migration. It shows that people mainly moved to the states which have witnessed higher growth rates of urbanization and achieved higher economic development compared to the states where employment opportunities are less. However, there are also some states which are showing significant in-migration as well as out-migration. The decadal growth rate of migration has increased during the period 1991 to 2001. Another important finding is that the overall sex ratio of migrants has reversed favouring males during the last decade. While there is a negative relationship between rate of in-migration and poverty, the volume of in migration is positively correlated with development.

#### **076. Relatively different. The dependency of internal migrants' selectivity on the place of destination**

*Itayetzky Vélez Torres, El Colegio De Mexico; Estela Rivero, El Colegio De Mexico; Estela Rivero, El Colegio De Mexico*

In the two recent decades internal migration in Mexico has developed a new pattern. One of the most important changes experienced is that whereas in the past most migrants had a rural origin, nowadays they tend to come from an urban area. In addition, the places of destination have diversified. Despite these transformations, migrants are still an auto-selected group that differ from non-migrants in their socioeconomic and sociocultural characteristics. Several works have documented this selectivity. Nevertheless, all of them treat migrants as if they were a homogeneous group and as if they were going to the same place. In this paper we explore the different patterns of migrants' selectivity according to their place of destination. Our results show that migrants, as a group, are more likely to be female, young and more educated than natives, but that there are three different patterns of migrants selectivity. Most importantly, migrants' selectivity is linked to the labor opportunities and requirements in the places of destination.

#### **076. Returns to Education and Earnings Inequality in Segmented Labour Market: A Study of Migrants and Locals in Large Chinese Cities**

*Fei Guo, Department of Marketing and Management, Macquarie University, Australia; Zhiming Cheng, University of Wollongong*

Increasing earnings inequality has been a feature of China's segmented urban labour markets in recent decades. This paper examines the effects of household registration or hukou-induced segmentation on earnings inequality and returns to education in urban China, using data from a survey conducted in four large Chinese cities in 2008, with a particular focus on three groups (urban locals, urban-to-urban migrants, and rural-to-urban migrants). The paper estimates returns to education in urban China by estimating separate Mincer equations for the three groups. A quantile regression is also carried out to examine the effects of covariates on earnings at different points of the conditional distribution. In addition, a decomposition of earnings differentials between groups is carried out to further identify the effect of education on earnings inequality using the Blinder-Oaxaca approach. The results indicate that factors such as downward mobility, fewer years of schooling and jobs in informal sectors have negative effects on rural migrants (but less so on urban migrants). It also finds that education is an important source of inequality. Inequality in educational attainments plays an important role in determining returns in urban labour market.

### **077. Changes in Residential Proximity between Older Adults and Their Children in Response to Cardiovascular Events**

*Hwajung Choi, Department of Internal Medicine, University Of Michigan; Robert Schoeni, University of Michigan; Kenneth Langa, University of Michigan; Michele Heisler, University of Michigan*

Cardiovascular disease is a leading cause of severe disability, which in turn creates a significant need for personal care among older adults. Children are the most important source of informal care among older adults. To facilitate care, family members may need to relocate following an adverse cardiovascular event of older adults. To measure proximity changes in response to older adults' cardiovascular event, we explore the Health and Retirement Study (HRS), a longitudinal survey of a nationally representative sample of US older adults. We identify new cardiovascular events of stroke, myocardial infarction and congestive heart failure among older adults who did not have a history of cardiovascular disease. And, we measured changes in residential proximity between older adults and their children by utilizing HRS geographic information. Results from clustered multivariate logistic regression and propensity score matching method suggest that having cardiovascular event increases the two-year predicted probability of children and adult parents moving closer to each other from 9.2% to 12.5%. Families are especially likely to migrate in response to a cardiovascular event if the older person experiencing the event is a woman, has a daughter, or has at least one child who does not work.

### **077. Giving more before receiving: informal care provision in later life**

*Athina Vlachantoni, University of Southampton*

The provision of informal care in later life is becoming increasingly important against the background of public expenditure cuts which threaten the level of support provided to older people and their carers. This paper uses data from waves 3 and 4 of the English Longitudinal Study of Ageing in order to explore the characteristics of carers aged 50 and over. The bivariate analysis explores the patterns of informal care provision in later life, including the hours of care provided per week and the relationship to the person cared for, as well as key socio-economic characteristics, such as housing tenure and the receipt of benefits from the welfare state. The multivariate analysis explores the determinants of becoming a round-the-clock carer in later life, defined as providing more than 110 hours of care per week. The results show that in terms of their health, socio-economic situation and receipt of state support, carers face a disadvantage compared to non-carers, while round-the-clock carers fare worse than other types of carers. Such results raise critical questions about the adequacy of social policy for this group of carers at a time of expenditure cuts.

### **077. Relevance of Traditional Safety Net for Older People in Changing Societies: Some Evidence from Bangladesh**

*Sharifa Begum, Bangladesh Institute of development Studies*

As well known, population ageing process is underway in many developing countries too giving rise to the increase of older population. This demographic development is a cause of concern in many of these countries, particularly in the realm of population management strategies, especially those relating to the quality of human life. In this context, in developing countries, the intergenerational relationship which used to serve as a protection base for older people is reemerging as a salient issue or drawing fresh attention. Bangladesh as a country falls in the above category. the ageing of population is progressing fast in the country but to protect the interest of these growing number there is no adequate public policies/institutions, while at the same time, there are indications that due to ongoing socio-economic and cultural changes the traditional joint living protecting the welfare of older people are increasingly falling apart. In this context, the present study using national level data tried to assess the concurrent support

provisions of older members and understand the changing behaviour of children who so far served as the sole provider to older parents.

### **077. Sons and daughters: adult children's care for the elder parents at the end of life in rural China**

*Shuzhuo Li, Xi'an Jiaotong University; Dongmei Zuo, Population Research Institute, Xi'an Jiaotong University, China*

Based on life course perspective, using data of the death survey derived from 5 wave longitudinal questionnaire surveys conducted in rural China, this paper studied factors affecting child care to older parents at the end of life. Multi-level linear model revealed that care is affected by the birth order of the child, physical distance and intergenerational exchange before death. End-of-life care is mainly provided by sons and by only son or only daughter. The eldest child's care ranked secondly, and least is provided by the youngest child. The child coresiding with older parents before death provided most and those who lives in the same village ranked secondly. Physical distance will reduce care. Those children, especially sons, who have more frequent intergenerational exchange with parents before death, provided more end-of-life care. It is implied that child's end-of-life care is driven by traditional "filial piety and fraternal duty" norm and mechanism of children's care labor division confirms to the principle of optimizing needs through strategic allocation of resources throughout the family system. Migrant children face competing obligations, while negative effects of sharp decline in fertility on older parents seems not as bad as imagined. Migration counterbalanced gender division of children in terms of end-of-life care.

### **078. Demographic Determinants of Economic Growth in BRICS and selected Developed Countries**

*Tanima Basu, International Institute for Population Sciences (IIPS); Debasis Barik, National Council for Applied Economic Research; Perianayagam Arokiasamy, International Institute for Population Sciences*

Demographic advantage contributes a large share of economic growth. This study tries to find out how far the presence of demographic window in BRICS countries is affecting efficiently in the growth of their economies compared to few selected developed economies (Japan, UK and USA). It is seen in this study that the contribution of demographic component (growth of share of worker in population) in growth of per capita GDP is higher in BRICS countries (except Russian Federation) compared to that of the developed nations. This study also finds out that the speed of convergence to steady state equilibrium income for BRICS is faster than that of the eight countries (BRICS and three developed nations) together. Education has a positive effect on economic growth for eight country model. The effect of growth of working age population to population ratio on growth in per capita GDP is more in case of BRICS countries. This indicates the substantial effect of demographic component on economic growth of BRICS countries particularly for China, India and South Africa since they are still going through the demographic dividend phase of transition.

### **078. Demographic transition in sub-Saharan Africa: implications for demographic dividend**

*Yoonjung Choi, United States Agency for International Development*

The study purpose is to understand projected changes in the population age structure, a critical condition for realizing demographic dividend, through 2100 in sub-Saharan Africa. Specific aims are: to estimate windows for advance investment and windows for benefiting from the economically favorable age structure, to compare the patterns of age structure changes to those in other less-developed regions, and to assess sensitivity of results across different assumptions in fertility decline projection, using the World Population Prospects, 2010 Revision data. Three patterns emerged: a pattern close to that in other less-developed regions, another pattern

suggesting much slower demographic transition in majority countries, and a final pattern where fertility decline is too slow to have substantial impact on the age structure. Even in the second pattern, the absolute population size increase may challenge realizing demographic dividend. Finally, about a half-child differences in TFR projection assumptions indicated significant variation in age structure changes.

**078. The potential for a ‘collateral’ demographic dividend – the case of New Zealand Māori.**

*Natalie Olivia Jackson, University of Waikato*

This paper outlines how a potential ‘collateral’ demographic dividend is presently arising in New Zealand, as the relatively youthful Māori population (median age 23) goes through its dividend years alongside its ageing, mainly European-origin counterpart (median age 40). As with the conventional first and second dividend periods, converting the collateral dividend to an economic windfall will not occur in and of itself – that requires identification of the window of opportunity, proactive investment in social capital, and political will. The paper locates the arguments in the context of New Zealand’s major industrial groupings which already have fewer employed people at labour market entry than exit age, especially in rapidly ageing regional areas which paradoxically have a disproportion of youthful Māori residents.

**079. Investigating the late fertility transition in Sardinia with individual data on a long-living population**

*Michel Poulain, Université Catholique de Louvain; Anne Herm, Tallinn University; Gianni PES, University of Sassari*

How the survival of children may affect the fertility behaviour of their mother? More directly could the lost of a child increase the fertility of his/her mother. This question is important in the study of the impact of the reduction of infant mortality for the fertility transition. Sardinian population that experienced late fertility transition and high level of marital fertility until the 1950’s has been reported as an appropriate case to address this question. We select the village of Villagrande located at 700 meters above sea level in the province of Ogliastra with 3,441 inhabitants still involved in agro-pastoral activities and living and traditional life style still prevalent. Based on church and civil records we reconstruct 702 completed families with parents married between 1851 and 1955. Even if we observe that mothers losing one child have a lower over risk to have a new child during the transitional period compared to the period of natural fertility regime, the decrease of fertility is lower than what could be expected from the decrease in infant mortality. In fact the fertility level for mother without lost child increased in the first phase of the transition between 1931 and 1950 and started to decrease thereafter only.

**079. Les différentiels sociaux de fécondité durant le baby-boom en Suisse**

*Aline Duvoisin, Université de Genève; Michel Oris, Université de Genève*

In this paper we want to explore the social differentials in the dynamics of the baby boom. The latter marked the trend of fertility in Switzerland beginning in the 1930s all the way to the 1950s. For this objective we rely on a large survey carried out in 2011/12 among more than 4000 elderly individuals living in Switzerland. This survey resulted in an impressively rich database since it also includes the parents of the baby boomers. Moreover, it offers information regarding the background of each individual, on accumulated human and social capitals and on family, residential and professional life trajectories. Furthermore, it also includes vast data concerning all of their children. After a description of the demographic trends, we performed two analyses focusing on: First, the final number of offsprings Second, the crucial intergenerational intervals from birth 2 to 3 and from birth 3 to 4. Our ambition is to assess the social homogeneity or the social differentials during the baby boom in order to contribute to a better understanding of this phenomenon.

### **079. Reproductive behavior during the baby boom in Spain**

*María Sánchez-Domínguez, Centre for Population Studies - University of Umeå; Alberto Sanz-Gimeno, Universidad Complutense de Madrid*

The goal of this paper is to address the micro determinants of reproductive behavior during the baby boom in Spain. The data used come from vital registration statistics and micro-census data, as well as from the recent Baby Boom and Bust Survey of Spain. This survey, undertaken between January and April of 2012, consists of 1,021 face to face interviews with women above 60 years of age randomly selected and representative for the entire country. In this paper, we apply an analytical strategy based on a bivariate and multivariate analysis (two models). The dependent variable for model 1 is children ever born and for model 2 it is the likelihood of having a third child among women having at least two childbirths. Within the two models we have used the following explanatory variables: year of birth, marital status, education, labor experience, age at first child, age at last child, fertility limitation, number of miscarriages, number of reproductive health problems, number of siblings of informant, and region of residence. We also include a variable related to partner social status.

### **079. The mid twentieth century baby boom in Sweden –changes in the educational gradient of fertility for women born 1915-1950**

*Glenn Sandström, Umeå University*

This paper analyzes changes in the educational gradient of fertility among Swedish women that participated in the mid twentieth century baby boom in Sweden. By using individual level data, that covers the entire Swedish population drawn from the Population and Housing Census in 1970, and the Multiple Generation Register (MGR), the study determines fertility outcomes during the baby boom across educational strata. The results indicate important differences between the first wave of the baby boom during the 1940s and the second peak in the 1960s. This is the case both with regards to education, as well as age-specific fertility patterns. The results show that a pertinent feature of the first wave was a fertility recovery among older cohorts that had postponed births during the 1930s and that the educational gradient was still strongly negative at this time. The second wave during the 1960s was on the other hand primarily created by increased fertility among younger women below 30 years of age. For these women born in the 1930s and 1940s, that increased their educational levels compared to earlier generations, fertility differentials across educational strata reached the lowest levels recorded so far during the twentieth century.

### **080. Adolescent pregnancy and education trajectories in Malawi**

*Satvika Chalasani, United Nations Population Fund (UNFPA); Barbara Mensch, Population Council; Erica Soler-Hampejsek, Population Council; Christine A Kelly, Population Council*

Education is a vital component of the preparation for adulthood, and is closely linked to transitions into marriage and parenting. Childbearing among adolescent girls in sub-Saharan Africa remains high, while primary school completion is far from universal. This paper uses longitudinal data from five rounds of the Malawi Schooling and Adolescent Study to investigate how becoming pregnant while attending school influences medium-term educational outcomes of young women. Employing multiple strategies to overcome potential endogeneity between pregnancy and education, we estimate the effect of pregnancy on enrollment, grade attainment, literacy, and numeracy. Preliminary results show that pregnancy is commonly cited as a reason for not attending school, and that girls who miss one or more school terms due to pregnancy are less likely to re-enroll than their counterparts who drop out for other reasons. However, girls who leave school due to pregnancy do not appear to be a selective group of sexually active girls with respect either to ability and aspirations or to background characteristics. This suggests that enabling girls to postpone family formation at least until after the completion of schooling could significantly

improve the education trajectories of those who otherwise would have had to interrupt or abandon their studies.

### **080. Teenage childbearing and dropout from school in South Africa: Evidence from a household panel**

*Ian Manfred Timaeus, London School of Hygiene and Tropical Medicine (LSHTM); Tom Moultrie, University of Cape Town*

This paper investigates the role that childbearing plays in the failure of teenage girls to complete their schooling in South Africa. Of women aged 20-34, only 33% who gave birth as teenagers had matriculated from Grade 12, compared to 57% of other women. The paper analysed nationally-representative panel data from the National Income Dynamics Study. It focuses on 671 young women aged 15-18 in 2008 who were re-contacted in 2010. Girls' risk of becoming a mother during these two years was largely unrelated to their home circumstances. Only girls from households in the top 20% of the income distribution were less likely to give birth. What was more important was whether they were already 1+ grades behind at school. While having a baby usually halts girls' schooling, girls who became mothers were already relatively unlikely to pass the matriculation exam. Moreover, although their socioeconomic background affects the attainment of younger girls, it is unimportant in this age group. Thus, even though teenage childbearing limits young women's life chances in South Africa, it appears to play a limited role in the reproduction of social disadvantage. However, one cannot infer that secondary schooling in South Africa is meritocratic: Lam et al. propose the more depressing conclusion that school attainment is no more than a lottery.

### **080. The return to school activity: Evidence for the Mexican context**

*Guadalupe F Pérez-Baleón, Universidad Autónoma Metropolitana Xochimilco; David P Lindstrom, Brown University*

The return to school is an important part of academic trajectories in more economically advanced societies where it often serves as a strategy for skill enhancement and socioeconomic advancement. Very little is known about this phenomenon in Mexico even though many youth and young adults return to school after beginning their working lives. The objective of this article is to describe trends in the return to school across three cohorts of Mexican men and women and to identify the factors that are associated with return to school. We use human capital and life course theory to generate hypotheses regarding the determinants of the return to school. The results show that factors positively associated with the return to school in this population included having secondary schooling or more, being unmarried, having lived in an urban area one year before, having parents in nonmanual or professional occupations, and belonging to younger cohorts. In contrast, age had a negative association with return to school. Men and women had similar risk to return to their studies, but we find that women belonging to oldest cohort and women without employment experience one year before were less likely to return to school than their male counterparts.

### **080. What happens after you drop out? : Work, school re-entry, and transition to adulthood among early school leavers**

*Ariane Utomo, Australian National University; Anna Reimondos, The Australian National University; Iwu Dwisetyani Utomo, Australian National University; Peter Francis McDonald, Australian National University*

We examine the work history and transition to adulthood among early school leavers. We use retrospective data from a sub-sample of young adults (20-34) residing in Greater Jakarta who ever dropped out of school at age 16 or below (N=799). It is commonly assumed that early school leavers would spend the rest of their formative years working as a child labourer. However, our

sequence analysis of the work and education history of early school leavers reveals this is not always the case. Less than a quarter of early school leavers worked in the immediate year following school exit. In contrast, about 30 per cent spent neither worked nor studied between the ages 12-18. Upon identifying that a small number of respondents eventually managed to return to school, we found that father's education and sex were the main predictors of school re-entry. Among those with early work experience, the top three occupations were workers in the processing/manufacturing industry, domestic servants/babysitters, and as informal traders. Finally, we found that early school leavers progressed faster into leaving parental home, marriage and parenthood relative to those who left school at ages 17-19.

## **082. Patterns and trends in contraceptive use dynamics in the Philippines: 1993-2008**

*Maria Paz Nazario Marquez, University of the Philippines*

In the Philippines, less than half of currently married women use a contraceptive method, a level which has remained stagnant in the past ten years. To get a clearer understanding of the contraceptive behavior of Filipino women, the study examines the changes in the patterns of contraceptive discontinuation and switching behavior over time using data from the 1993, 1998, 2003 and 2008 Philippine Demographic Health Surveys. The data show a decline in discontinuation for all methods except for withdrawal. Nearly half of discontinuations of rhythm and withdrawal are due to unintended pregnancy while side effects is the most common reason for discontinuing use of pills, IUD and injectables. Younger women (<30 years old), poor women, and less empowered women exhibited higher discontinuation rates than their counterparts. Results also show an upward pattern in the switching rates to modern methods regardless of the method of origin. Switching rates to modern methods are higher than the switching rates to traditional methods in all subgroups of women regardless of the initial method. The findings suggest the need to encourage women to maintain their contraceptive use particularly of modern methods and to focus efforts on the identified subgroups of women with higher risk of unintended pregnancies.

## **082. Post-abortion contraceptive use and continuation in Nepal**

*Mahesh Chandra Puri, CREHPA Nepal; Corinne Rocca, University of California, San Francisco; Maya Blum, University of California, San Francisco; Cynthia Harper, University of California, San Francisco; Bishnu Dulal, CREHPA, Nepal; Jillian Henderson, University of California, San Francisco*

**Introduction:** The study examines post-abortion contraceptive use over 12 months among women receiving induced abortion services in Nepal. **Data and Methods:** The data are from a prospective cohort study of abortion clients at four health facilities. Overall, 838 women were enrolled; 654 completed 6-month interviews, and 624 completed 12-month interviews. Life table analysis methods were used to estimate contraceptive continuation and pregnancy. Further analyses will be conducted using Cox proportional hazards models to estimate factors associated with method continuation and pregnancy. **Results:** At baseline, 57% of women reported adopting a modern method of contraception. This percentage dropped to 52% at 6 months and 50% at 12 months, with changes in the methods used. The overall contraceptive continuation rate for female controlled effective modern methods was 58.2 per 100 person-years. The continuation rate for the injectable was 49.6/100 person-years and for the pill was 63.8/100 person years. Although few women initiated use of long-acting reversible contraception (3.5%), continuation rates were higher for these methods than for the pill or injectable (92.3/ 100 person years,  $p < .01$ ). **Conclusions:** The results suggest a need to increase use of modern contraceptives by improving service quality, particularly counselling.

## **082. The Effect of Quality Family Planning Services on Contraceptive Switching Behavior in Indonesia**

*Mugia Bayu Rahardja, National Population And Family Planning Board, Indonesia*

The success of family planning (FP) program is measured not only by the improvement of contraceptive prevalence but also by the effectiveness and duration of contraceptive use. Therefore, in the future FP program needs to be focused in supporting couples in order to sustain contraceptive use through its good quality of FP services. Good quality of FP services also makes the risk of unwanted pregnancy lower as couples will be more devoted to practice a specific contraceptive method correctly. This research uses the data of the 2007 IDHS calendar data by employing a random-effect logistic regression model. The objective is to study the influence of FP services quality and other socioeconomic and demographic factors on switching contraceptive behavior in Indonesia. The multivariate analysis results show that the quality of FP services which consists of informed choice and FP officer's visit significantly influence the possibility of FP acceptor to switch their contraceptive method. The result of this research also supports the previous researches that socio economic and demography factors significantly influence the possibility of FP acceptor to switch their contraceptive method.

## **082. Understanding patterns of temporary method use among urban Indian women**

*Janine Barden-O'Fallon, University of North Carolina at Chapel Hill; Ilene Speizer, University of North Carolina at Chapel Hill; Livia Montana, University of North Carolina at Chapel Hill; Lisa Calhoun, University of North Carolina at Chapel Hill; Priya Priya Nanda, International Centre For Research On Women*

This analysis will examine the patterns of temporary contraceptive method use among a representative sample of urban women from Uttar Pradesh, India. In particular, differences between women that use condoms, other temporary modern methods (pills, IUD, or injectables), and traditional methods will be explored, including socio-demographic characteristics of users, fertility desires, patterns of switching between methods, and pregnancy outcomes within a two year period. Patterns of multiple method use during a two year period will also be examined. The data come from baseline and midterm surveys conducted in four cities of Uttar Pradesh, India in 2010 and 2012 by the Measurement, Learning & Evaluation (MLE) project as part of the evaluation of the Urban Health Initiative. The midterm survey included a two year calendar of contraceptive use, discontinuation, switching, and pregnancy, which will be used for the analysis. The authors aim to add to the evidence base on the use of temporary methods and birth spacing, specifically among condom users. The analysis will also contribute to the body of research on urban health by considering wealth and slum/non-slum residence among the characteristics that differentiate temporary method users.

## **083. Integrating sexual and reproductive health and HIV services in public health facilities: Evidence on men's involvement and uptake of services in Kenya**

*jackline Imali Kivunaga, Population Council; Timothy Osebe Abuya, Population Council; James K Kimani, Population Council; Charlotte E Warren, Population Council*

Background: Men's support is key in improving the uptake of their partners' sexual and reproductive health (SRH) services, hence contributing to efforts aimed at achieving Millennium Development Goals 4, 5 and 6. The study's objective was to explore men's perceptions on and uptake of SRH services in Kenya. Methods: Data were derived from qualitative interviews conducted with 60 men from communities neighboring facilities that were part of a larger study that assessed the relative benefits of different models of integrated SRH/HIV service provision over separately provided services. Interviews were recorded, transcribed verbatim, translated and analyzed thematically. Findings: Generally, men felt comfortable seeking SRH services together with their partners. Most services sought together were HIV counseling/ testing and family

planning services. Other services, but minimally were HIV care/treatment, antenatal, postnatal, sexually transmitted infections screening/treatment, and condoms provision. Waiting times and service scheduling at facility were some of the barriers that hindered men's uptake of services. Conclusions: Study demonstrates that men are receptive to seeking services together with their partners. However, existing barriers need to be addressed in order to increase men's uptake of SRH services.

### **083. Integration of Family Planning with Maternal Care Services: Opportunity to enhanced Service Provision in Urban Uttar Pradesh, India**

*Pranita Achyut, Icrw; Lisa Calhoun, University of North Carolina at Chapel Hill; Anurag Mishra, ICRW*

Considerations around repositioning family planning emphasize the need to integrate FP counseling and services with maternal and child health services particularly postpartum and post-abortion care. This paper examines the effect of the exposure to FP counseling and services during antenatal care, delivery and postpartum care on the use of contraceptives in four cities of Uttar Pradesh. Using midterm data collected in 2012 as part a longitudinal study, this paper focuses on women who had delivered in last two years (n=975). Among these, 36 percent reported adopting modern contraceptive postpartum, while 21 percent adopted traditional. Further, data reveals that only a small proportion of women received FP information and services during ANC (18%), delivery (22%) and PNC (13%), though large proportion had come in contact with providers. Multivariate analysis shows that women who delivered at facility and received counseling/services at that time are more likely to use contraceptive post-partum, than those who delivered either at home or did not receive any information in the facility. Clearly, the opportunity to reach potential FP clients with information and services during antenatal and delivery care services is largely missed, which needs to be strengthened to improve use of modern contraceptive methods.

### **083. Integration of Family Planning: An Example from Two Regions in Ghana**

*Emmanuel Osei Kuffour, Population Council; Abisola Noah, Population Council; Placide Tapsoba, Population Council; Selina Fosuaa Esantsi, Population Council, Regional office for Sub-saharan Africa (Ghana); Eunice Adjei, Engenderhealth; Amos Laar, University of Ghana, School of Public Health*

Introduction Ghana has one of the highest maternal mortality ratios in the world. A recent national survey (GSS et al., 2009a) revealed that about 451 women per 100,000 live births die due to pregnancy, unsafe abortion, or complications of labor in Ghana. In Ghana, most hospitals and clinics have a FP unit where clients are referred to for services. However clients presenting to health facilities for non-FP purposes are not routinely screened and counseled for FP need. From May 2010 to March 2011, the Reducing Maternal Morbidity and Mortality (R3M) Program in collaboration with the Ghana Health Service (GHS) embarked pilot project to improve access to FP services by integrating into other services at the facility level. This culminated in a baseline survey and the roll out of interventions in some health facilities in the Eastern and Ashanti regions of Ghana.

### **083. Integration of Reproductive Health Service Utilization and Inclusive Development Programme in Uttar Pradesh, India**

*Diwakar Yadav, FHI 360, New Delhi, INDIA; Chander Shekhar, International Institute for Population Sciences (IIPS)*

Access to benefits from inclusive development programmes, maternal-child health (MCH) care and family planning (FP) services can aid development of country's health. Early efforts to combine these services are still untested and approved. Structural equation models utilize to

examine the effect of inclusive development programme at village level on the relationship between MCH and FP service utilization. A cross-sectional District Level Household Survey (2007-08) covered 76,147 currently married women age 15-44 years through multi-stage stratified probability proportion to size sampling. It was found there were no specific pattern of common exogenous predictors except children ever born ( $p < 0.05$ ), mothers education ( $p < 0.05$ ) and wealth index of households ( $p < 0.05$ ) for the service utilization. Finding suggests that FP, MCH care services and inclusive development programs are introduced and available, the likelihood of adoption of services is higher, compared only one service is available in state. The rationale for integration of family planning and MCH care services with inclusive development programme at village level have been based on three grounds: improving the efficiency and effectiveness of programmes and services; meeting clients need from “one-stop” service; and accelerating the pace of health and demographic outcomes.

#### **084. Death of a child and parental wellbeing in old age: Evidence from Taiwan**

*Chioun Lee, Princeton University; Dana Gleit, University of California, Berkeley; Maxine Weinstein, Georgetown University; Noreen Goldman, Princeton University*

The death of a child is one of the most traumatic events that a parent can experience. The psychological and physical consequences of bereavement are well established, and the consequences are more severe for mothers than fathers. However, little is known about how the death of an adult child affects parental wellbeing in old age or how the deceased child's sex may moderate the association. We use data from the Taiwanese Longitudinal Study of Aging (TLISA) to investigate how the death of a son or a daughter differentially affects the wellbeing of older parents, measured by depressive symptoms and self-rated health. We find that for mothers, a son's death is associated with an increase in depressive symptoms and a decline in self-rated health, but fathers' health is not adversely affected by a son's death. There is little evidence that a daughter's death has a negative effect on either maternal or paternal wellbeing. We situate these findings within their social and cultural contexts and discuss social policies that would reduce gender and health inequality.

#### **084. Socioeconomic development and sex differences in cardiovascular disease mortality between East Asian and Western populations**

*Jiaying Zhao, Australian National University; Edward Jow-Ching Tu, Hong Kong University of Science and Technology; Zhongwei Zhao, Australian National University*

The excessive mortality from cardiovascular disease (CVD) among males is an important component of high sex ratio of overall mortality. It has been observed that the sex ratio of CVD mortality in some Western countries increased from the 1950s but that has declined in recent years. However, little research has assessed secular trends in the sex differentials of CVD mortality, particularly by age-period-cohort decomposition, in areas under rapid economic development with swift epidemiologic transition and nutrition transition. We examine the trends in the sex ratio of CVD mortality in East Asia (Japan, Republic of Korea, Hong Kong, and Taiwan) which went through a rapid economic development during the past 5 decades. These trends are compared with those in selected Western populations (Australia, France, England & Wales, and Sweden). Our analyses suggest that the higher sex ratio of CVD mortality occurred among cohorts that had spent a large part of their childhood and early to middle adulthood in a more developed environment. This could be due to the influence of risk factors on males, who appear to be more susceptible to CVD than females. These risk factors are associated with the Nutrition Transition under economic development.

#### **084. The Impact of Smoking And Other Non-Biological Factors on Sex Differences in Life Expectancy: An International Comparison**

*Marc Luy, Wittgenstein Centre (IIASA, VID/OEAW, WU); Christian Wegner-Siegmundt, Wittgenstein Centre (IIASA, VID/OEAW, WU)*

The aim of this paper is to investigate more deeply the role of smoking for sex differences in life expectancy in comparison to other non-biological factors. Based on the findings of previous studies we expect that populations differ mainly with respect to the time location inside the smoking epidemic model and the absolute number of years smoking contributes to the sex gap. To test these hypotheses we decompose the sex differences between 1955 and 2009 into fractions caused by biological factors (estimated on the basis of differences in life expectancy between female and male Catholic order members), smoking, and other non-biological factors for 53 industrialized countries. We find that smoking can indeed be seen as the main driver of the trend in sex differences in life expectancy for most populations, giving further support to the importance of the smoking epidemic model. However, our results reveal that the common view that smoking is also responsible for most of the sex difference itself does not hold in general. There are almost as many populations with a higher contribution of other non-biological factors as populations in which smoking is the main factor behind the sex gap.

#### **084. To what extent the genders gap in health a social issue? An exploratory analysis of the contribution of family and work situations to sex differences in health**

*Emmanuelle Cambois, Institut National d'Études Démographiques (INED); Ariane Pailhe, Institut National d'Études Démographiques (INED)*

A recent study indicated an expansion of disability in France in the 50-65 age group, which went along with an increase in the sex differentials. Above differences in diseases, gender studies suggest a possible detrimental effect of situations related to gender social roles. Specific combinations of work and family loads might impact health and functioning. This paper describes gender-specific family/work situations and their impact on health using the French Gender and Generation Survey. The analyses are based on two health dimensions (mental wellbeing, activity limitations) and various social and family situations.

In the 2005 survey, 20% of men and 19% of women aged 35 to 79 years older report activity limitations and 12% and 26% report poor well-being. Women face more combinations of work and family loads which are expected to be associated with poor health. Generally these situations affect health in both sexes. Accounting for the gender-specific distribution of these situations tends to lower the OR of female over male health risks, but changes are not significant. This exploratory study show situations of vulnerability with a combination of isolation and family/work burden associated with poor health. Meanwhile, more research is needed to better define these situations and measure their link with health.

#### **085. A Case of Reterritorialization or Deterritorialization? The Migration of Taiwanese College Students to China**

*Pei-Chia Lan, National Taiwan University*

During the last two decades, an increasing number of Taiwanese students have emigrated to China to pursue higher education. The student migration between Taiwan and China, two countries with cultural affinity and yet political tension, involves complex practice of border control and identity work. Based on in-depth interviews and policy analysis, we look into relevant institutional frames and migration trajectory to engage in the thesis of “reterritorialization” and “deterritorialization.” On the one hand, the Chinese government has offered Taiwanese with privileged access to college admission in order to symbolically serve as their “homeland.” On the other hand, Taiwanese students, whose motives may be degree-oriented, work-oriented or family-guided, cross Taiwan Strait as a strategy of spatial mobility and flexible capital accumulation. To negotiate their liminal

position in China, Taiwanese students often reconstitute their national identity or reinforce ethnic boundary as an unintended consequence of their student migration.

### **085. The international mobility of students in OECD countries and its links with labour migration policies**

*Thomas Liebig, OECD*

Over the past decade, the number of international students in OECD countries has continuously grown, and reached more than 2.6 million in 2010. In Korea, the number of international students almost sixfold since 2004, to reach 59 000 in 2010. In several OECD countries, in particular those which are English-speaking, fees from international students are also a significant source of revenue. More importantly, however, international students have become an increasingly important source for labour migration in OECD countries, and estimates by the OECD suggest that about 15-30% of international students stay on after their studies. Many countries have provided privileged pathways for such status changes and also facilitated the labour market access of international students during their studies. Indeed, international students have a number of characteristics which facilitate their lasting integration into the host-country labour market such as a domestic degree whose value employers can easily judge, they also often have gained knowledge of the host-country institutions and language.

### **086. Applying and Extending the Lee-Carter Model to Forecast Age-Specific Migration**

*James Raymer, Australian National University; Arkadiusz Wisniowski, University of Southampton; Peter W. F. Smith, University of Southampton; Jakub Bijak, University of Southampton*

In this paper, we explore the application of the Lee-Carter type models to forecast migration. The Lee-Carter model and its variants are considered to be a flexible approach to modelling age-specific mortality and fertility. However, its usefulness for forecasting migration is unknown. For application, we forecast age-specific immigration counts and emigration rates for the United Kingdom. To overcome irregularities exhibited in the sample-based migration data, we include smoothing in the model. Various specifications are presented to show the differences in predicted levels and measures of uncertainty.

### **086. Estimating Global Migration Flow Tables Using Place of Birth Data**

*Guy J. Abel, Wittgenstein Centre (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences*

International migration flow data often lacks adequate measurements of volumes, direction and completeness. These pitfalls limit comparative studies of migration and constrain cross national population projections to use net migration measures or inadequate data. This paper aims to address these issues at a global level, presenting estimates of bilateral flow tables between 191 countries. A methodology to estimate flow tables of migration transitions for the globe is illustrated in two parts. First, a methodology to derive flows from sequential stock tables is developed. Second, the methodology is applied to recently released World Bank migration stock tables between 1960 and 2000 (Ozden, 2011), estimating a set of four decadal global migration flow tables. The results of the applied methodology are discussed with reference to comparable estimates of global net migration flows of the United Nations and models for international migration flows. The proposed methodology adds to the limited previous literature on linking migration flows to stocks. The estimated flow tables represent a first-of-a-kind set of comparable global origin-destination flow data.

### **086. Estimating international migration flows based on a passenger database: A case study for Colombia**

*Joaquín Recaño-Valverde, Universitat Autònoma de Barcelona; Carolina Sánchez Barriga, Jacqueline Martínez García, Vivian Natalia Rivera Sepulveda, Departamento Administrativo Nacional de Estadística (DANE)*

In a great deal of countries do not have statistical records on international migration and the data they use comes from censuses that are carried out in ten-year intervals which are unable to capture cyclical changes of international migration. The purpose of this paper is to present the methodology of estimation of a new source of information on international migration flows in Colombia which is being developed by the Departamento Administrativo Nacional de Estadística (DANE) and Migración Colombia. This new source consists of individual records of passengers collected at border controls by air, land and sea. With this information, DANE produces an estimate of the international migration flows. The database contains demographic information and geographic information, socioeconomic data and the legal status of travelers. The data used in this study comes from the 41,683,460 international trips registered in the period 2004-2010. The data have been subjected to a process of anonymization so as to allow the reconstruction of individual information on the travel itineraries of 10,461,355 people for the same time period. The methodology and the reconstruction of migration flows (comparing them with those registered in others countries) are some of the aspects discussed in this paper.

### **086. Leaving, returning: reconstructing trends in international migration with five questions in household surveys.**

*Cris Beauchemin, Institut National d'Études Démographiques (INED); Bruno Schoumaker, Université Catholique de Louvain*

Data on international migration trends are crucially lacking, especially in developing countries. The lack of basic information on migration is in sharp contrast with the increasing importance of migration in the population and development agenda. Demographic surveys offer unique opportunities to collect original data on international migration. A few simple questions in relatively small-scale surveys can be used to reconstruct migration trends with a reasonable degree of precision, and can greatly improve the knowledge of levels, trends, and patterns of international migration. The objectives of this paper are threefold: (1) To describe the data and method used to reconstruct trends in first departure and returns. (2) to reconstruct trends in migration in Senegal, Ghana and DR Congo with data from the MAFE project, and (3) to assess the quality of these estimates.

### **087. Do people adapt to poverty? Evidence from the German SOEP**

*simone ghislandi, Bocconi University*

We analyze the multi-faceted effects of poverty on the subjective well-being of individuals. Using panel data on more than 42,500 individuals living in Germany from 1993 to 2010 we show that self-reported satisfaction with life decreases as a result of both contemporaneous and past episodes of poverty. The intensity of contemporaneous poverty also plays an additional negative role. In addition, poor individuals prefer income stability so that persistent poverty is less harmful than the same number of years of low income experienced with movements in and out of poverty. The negative effects of being in poverty are permanent and do not vanish over time: individuals do not adapt to poverty, and, even when subsequently out of poverty, they report lower satisfaction with life. These effects differ by population subgroups.

**087. The long-lasting health effects of business cycles: How does exposure to economic booms and recessions over the life-course impact later-life health?**

*Philipp Hessel, London School of Economics and Political Science (LSE); Mauricio Avendano, London School of Economics & Harvard School of Public Health*

Studies suggest that in the short-term health improves during economic recessions, but whether these effects are offset by long-run negative health effects has not been established. We examine whether economic recessions and booms during early- and later-adulthood (ages 16-49) have negative long-lasting effects on health at ages 50-74. We link data on macroeconomic fluctuations for 11 countries to survey data from the Survey of Health, Ageing and Retirement in Europe (SHARE). We estimate country-fixed effect models for several measures of physical functioning (incl. grip strength) using exogenous information about the state of the business cycle at specific age-intervals as main covariates. Results show that each additional recession experienced at any age-interval between 16 and 49 years is associated with worse health outcomes at later life. At the same time booms experienced at ages 16-49 can reduce the risk of some disability outcomes later in life. This pattern not only holds for levels of disability but also for changes of functional status at ages 50-74. Our findings suggest that long-run negative effects of less favourable economic conditions outweigh potential positive short-term effects of economic declines. They also raise important questions on the mechanisms linking macroeconomic shocks to health in the long-run.

**087. Injury Mortality Patterns: Effects of Transition from the Soviet World versus withstanding the Global Recession, Based on the Estonian Case.**

*Peeter Värnik, Tallinn University; Luule Sakkeus, Estonian Institute for Population Studies, Tallinn University*

It is acknowledged that the level of injury mortality reacts quickly to socioeconomic changes. Transition from the Soviet system initially brought a two-fold rise from the average level of the 80's to an injury SDR of 242 per 100000 in 1994 in Estonia (54 in EU). Thereafter the decline, both in total mortality and injury mortality, has been exemplary. The nature and success of reforms is the best explanation for differences among countries according to Vallin and Shkolnikov. During the Asian crisis of 1997/8 and especially the 2008/9 global recession, which had severe economic consequences, the trend did not change – injury SDR fell from 110 in 2007 to 77 in 2011.

Interestingly today, when the injury mortality is much lower, inherent characteristic features still remain in Estonia. The male/female ratio, globally around 2, has firmly stayed at 4-5 during past 20 years. Unlike in most countries where injury mortality is peaking in the oldest age group, a second peak at the age of 45-59 is evident.

There is a notable difference between cohorts during the transition – those born around 1955 were hit the hardest. Employed population has enjoyed a significant decline of injury deaths, unemployed have seen their situation stabilise.

**088. A Road Map to Accelerate the Fertility Decline in Western Africa**

*John F. May, Population Reference Bureau (PRB); Jean-Pierre Guengant, Institut de Recherche pour le Développement (IRD)*

From a demographic standpoint, most Western African countries are chiefly characterized by their slow demographic transitions. Fertility levels remain high, estimated at 5.4 children per woman on average. Contraceptive prevalence rates (CPRs) are very low, at less than 10% overall (modern methods) and have stagnated in several countries over the past 10 years. Given this context, the paramount population policy question is whether these countries can accelerate their demographic and, particularly, fertility transitions with the view of capturing their demographic dividend. The paper, focused on 13 countries, will offer an overview of fertility and contraception trends, based on the Bongaarts model of the proximate determinants. Thereafter, the paper will review the set of

policies and strategies that could help accelerate the fertility transition. The paper will also combine the results of the fertility analysis with the examination of the policies and strategies as well as other programmatic interventions specifically geared at reducing fertility. Finally, the paper will offer a “road map” or a set of steps that would permit to increase CPRs by about 1.5 percentage point per year, as compared to 0.5 currently.

**088. Changing fertility preferences in urban and rural Senegal: patterns and determinants**  
*Estelle Monique Sidze, African Population and Health Research Center (APHRC)*

This study draws upon data collected in urban and rural Senegal and cohort analysis, to explore changes in women’s fertility preferences and the contradiction between preferred and actual fertility behaviors. Regression analyses by cohorts is used to determine the factors affecting women’ fertility preferences over time. The total fertility rate in Senegal remains high at 5 children per woman and the country has one of the highest unmet needs for family planning services in the West Africa region. This study’s findings therefore will provide policymakers with an understanding of the potential demand for fertility control and help in formulating policies to reduce fertility and improve maternal health.

**088. Further evidence of community education effects on fertility in sub-Saharan Africa**  
*Oystein Kravdal, University of Oslo*

Earlier investigations have shown associations between a woman’s chance of having a child, or various proximate determinants of her fertility, and the socioeconomic resources in the community in which she lives, net of her own resources. This study, which is based on DHS surveys from 28 countries in sub-Saharan Africa, adds to the knowledge about this issue. With a focus on first and higher-order birth rates, four specific questions are addressed. One result is that the negative associations between a woman’s birth rates and the average education in the census enumeration area in which she lives, net of her own education, have remained stable or become stronger over the last decade. Second, these associations are most pronounced among women who score high on indicators of socioeconomic development, which suggests that they may become further strengthened. Third, associations even appear when a fixed-effects approach – based on data from two DHS surveys with GPS coordinates in each country – is employed to control for unobserved constant characteristics of units at a slightly higher level than the census enumeration area. Fourth, local processes seem to be particularly important: the education among women in the province or nearest census enumeration areas is not inversely associated with fertility.

**088. Why African Fertility Declines Must Be Demand Driven**

*John B. Casterline, Ohio State University; Samuel Agyei - Mensah, University of Ghana*

This paper considers prospects for fertility decline in sub-Saharan Africa in light of existing fertility desires, as captured in recent household-level surveys conducted from the 1970s to the present (ideal number of children, desire for another child). We show that pre-transition and at the onset of transition, fertility desires are noticeably higher in Africa than in other major regions (Asia, Latin America). We also examine recent trends in fertility desires, with a focus on countries that have already experienced some fertility decline. The analysis proceeds to divide fertility into wanted and unwanted components, and simulations of further fertility decline are carried out. From these it is clear that existing fertility desires are incompatible with a fall in fertility to low levels (i.e. TFR<4.0), leading to the conclusion that African fertility declines in a fundamental sense will be demand-driven. The paper concludes with commentary on strategies for lowering fertility desires, with particular attention to the potential causal impact on fertility desires of expansion of family planning services. We stress that while such an impact is very plausible on theoretical grounds, the empirical evidence that this occurs remains weak.

**089. Impact of intergenerational relations on decision concerning marriage: comparative analysis with special focus on bridal pregnancies.**

*Krzysztof Tymicki, Warsaw School of Economics*

According to theory of second demographic transition change in norms and attitudes towards family formation should lead to increase in proportion of extramarital births and simultaneous decrease in proportion of marital births. However in countries like Poland significant fraction of marital births are those conceived outside of pre-maritally and delivered within marriage (26% bridal pregnancies in 2011). This pattern results from existence of normative tension related to legitimization of out-of-wedlock births. Our main research hypothesis states that this results mostly from pressure from older generation to obey the norm and is sanctioned by degree of economic support given to the youth. Thus, we expect higher incidence of bridal pregnancies among families with higher economic and social status. In order to test above hypotheses we use data from GGS conducted in Poland. Additionally the results for Poland are confronted with results coming from other countries with high (Italy, Spain) and low (Netherlands) incidence of bridal pregnancies. Analyses are aimed at measurement of intergenerational pressure via social proximity of generations, economic status of older generation and economic status of young couple. For the purpose of modeling we use multinomial logit model for our outcome variable (type of family formation).

**089. Les logiques de coexistence des générations en milieu urbain au Burkina Faso**

*Abdoulaye MAÏGA, Université Catholique de Louvain; Banza Baya, University of Ouagadougou*

Les structures familiales traditionnelles élargies trouvent leur fondement en partie dans les modes de production et de reproduction sociale régis par un contrat intergénérationnel tacite. Avec la modernisation et l'urbanisation, les schèmes traditionnels sont variablement affectés, avec pour conséquence une recomposition des structures familiales suivant une logique individuelle ou de famille nucléaire au détriment du groupe familial étendu. En dépit de l'émergence de la logique de sélection de la parentèle susceptible de bénéficier de la solidarité résidentielle, il convient de souligner la résistance de la logique d'obligation de parenté élargie, par concentration des générations et des collatéraux dans les centres urbains. Face à la pluralité et à la complexité des structures familiales urbaines, l'étude s'intéresse à la situation des familles urbaines burkinabés et les recompositions éventuelles de celles-ci, eu égard à la forte urbanisation qui caractérise le pays. Les modèles d'analyses descriptives et explicatives mettent en évidence des schémas familiaux urbains se caractérisant par une dualité reposant sur une sorte de conciliation entre les traditions familiales de parenté étendue et l'adaptation à de nouvelles exigences de modernisation se traduisant par une préférence voire une primauté pour la famille restreinte.

**089. Living Arrangements and the Economic Well-being of Single Parents: A Cross-national Comparison**

*James Raymo, University of Wisconsin at Madison; Timothy Smeeding, University of Wisconsin; Hillary Caruthers, University of Wisconsin*

We extend recent research on relationships between living arrangements and the economic well-being of single-parent families in the U.S. by using comparable data from five countries and by examining measures of wealth in addition to income. Preliminary tabulations of harmonized data from the Cross-National Equivalent File (CNEF) demonstrate marked cross-national differences in the living arrangements of unpartnered parents, with lone-parent families relatively common in Germany and coresidence with parents most common in Korea. There are also clear differences in the economic benefits that single parents derive from coresidence with parents, which are most pronounced in Korea and relatively limited in the U.S. Findings from this project will have implications for understanding the ways in which demographic change and living arrangements

contribute to differences in levels and trends in income and wealth accumulation across countries and in comparison to the United States.

### **089. Strong Family Ties and Divorce in Japan**

*Akihiko Kato, Meiji University*

Divorce has rapidly increased since the 1970s in Japan. Existing research suggests that the expansion of socio-economic disparities with deteriorating macro-economic performance is a major cause of the rising divorce rate. However, not only socio-economic factors but also family background characteristics may play an important role, especially in a 'strong family' country like Japan. This paper investigates the effects of intergenerational family ties on the risk of divorce, using retrospective life history data from a nationally representative survey in Japan. In the past decade, much has been written and discussed about the associations between strong family ties and low fertility, however, little attention has been paid to the relationships between strong family ties and divorce. The results of discrete-time logistic regression models suggest that patrilocal co-residence and residential proximity as well as the presence of young children substantially reduce the risk of divorce. The fact that intergenerational co-residence can stabilize marriage denotes that weakening intergenerational ties or 'weak family' may entail a higher risk of dissolution, given the long-term decline in macro-economic performance. The results would provide valuable insights into the links between strong family and demographic behavior.

### **090. The Integration of Children of Turkish Immigrants in 11 European Cities: Psychosocial and Contextual Factors**

*george groenewold, Netherlands Interdisciplinary Demographic Institute (NIDI); Helga De Valk, NIDI/Vrije Universiteit Brussel*

Using recent survey data of children of Turkish immigrants and native comparison group members, this paper examines effects of contextual and psychosocial factors on acculturation preferences. Berry's acculturation model is used to classify the Turkish second generation into acculturation style categories (assimilation, integration, separation, marginalization) whereas the Health Belief Model (HBM) is used to identify relevant contextual and psychosocial factors of acculturation preference style. Multiple Classification Analysis (MCA) is used to examine effects of HBM inspired factors on preference style, and to profile respondents with a particular style according to common background characteristics. The latter is particularly useful for tailoring integration policies to specific target groups. Results indicate that policy and local context (cues to action) are of prime importance to the explanation of acculturation preference whereas indicators of perceived threat to social exclusion, benefits of and barriers to social inclusion, and self-efficacy also contribute to the explanation of acculturation preferences styles of the Turkish second generation.

### **090. Language use of migrant families in Flanders: How does family language reflect family acculturation?**

*Graziela Dekeyser, KU Leuven - Centre for Sociological Research; Paul Puschmann, KU Leuven; Gray Swicegood, KU Leuven; Koen Matthijs, Katholieke Universiteit Leuven*

We investigate the determinants of language use between migrant parents and their children in Flanders. Coleman's family capital theory serves as the theoretical orientation of the study. Differences in physical, human and social capital are believed to account for differences found between migrant families' use of the heritage and/or destination language (Dutch) at home. Furthermore, we expect that variances in ethnic capital (e.g. ethnic background and ethnocultural family type) might explain different linguistic repertoires. Last but not least, family structure is believed to serve as a gateway through which different forms of family capital influence the use of heritage language. Data from 900 migrant adolescents from the Leuven Adolescents' and

Families Study is analyzed by means of Multinomial Logistic Regression and subsequent Multilevel Regression Models where school and neighborhood variables are included. Preliminary correlation analyses indicate that language-use is related to background variables such as ethnicity and ethnocultural family type. Some family capital variables appear to be significant (parental conflict, parental dissolution, human & physical capital of mother) while others are not (relationship quality with parents & physical capital of father). More data will be collected during the fall of 2012.

### **090. The roles of migrant networks in the labour market trajectories of Senegalese men in Europe**

*Sorana Toma, University Of Oxford*

This paper examines the impact of migrant networks on the labour market trajectories of Senegalese men in Europe. The general assumption in the literature is that membership in co-ethnic networks enhances immigrants' employment opportunities at destination. This assumption has increasingly been challenged on both empirical and theoretical grounds. Using longitudinal data recently collected within the framework of the Migration between Africa and Europe (MAFE) project, this paper is able to avoid usual biases, such as reverse causality. Moreover, the transnational nature of the sample - Senegalese current and return migrants were interviewed in France, Italy, Spain and Senegal - allows for investigating the influence of the context of reception in the functioning of networks. Findings reveal a heterogeneous picture, as effects depend on the context of destination, the time since arrival and the legal status of the migrant. Having close kin at destination enables legal migrants to engage in a longer job search. Both kin and friends increase chances of gaining access to semi or skilled employment and protect from the more precarious status of self-employment in France, but do not have the same effects in Italy or Spain, where the Senegalese community is more recent and less diverse in terms of socio-economic status.

### **090. Asian Tigers Abroad: From Educational Achievement to Labor Market Success among the 1.5 and 2nd Generation**

*Monica Boyd, University of Toronto; Junmin Jeong, University of Toronto; Siyue Tian, University of Toronto*

Immigration from Asia to North America has steadily grown since the 1960s, and today scholars study the labor market integration not only of immigrants but also of their children. Using parental birthplace and visible minority data from the 2006 Canadian census, the occupational statuses and earnings of nine Asian origin 1.5 and 2nd generation groups are compared to each other and to the third-plus generation whites: South Korea, Chinese from Hong Kong; Chinese from the People's Republic of China; Japan; Philippines; Vietnamese; Sri Lanka; India and Pakistan. With the exception of the Filipino and Vietnamese 1.5 and 2nd generation, analysis of the population age 25-39 who living in cities of 100,000 or more confirm the higher educational achievements, occupational standing and earnings of many of these groups. Much of these labor market achievements reflect the educational characteristics of the Asian origin 1.5 and 2nd generation; however some groups – notably South Koreans and Chinese from HK and PR still perform marginally better in the labour force even after taking education into account. Overall our analysis shows the labor market success of these Asian Tigers while confirming the importance of education for their achievements.

### **091. Growth Pattern of China's Cities Since 1950**

*Danan Gu, United Nations; Nan Li, United Nations Population Division; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section); Kirill Andreev, United Nations Population Division (Population Estimates and Projections Section); Thomas Spoorenberg, United Nations Population Division; Junshan Zhou, People's Public Security*

*University; Chandra Sekhar Yamarthy, United Nations, Population Division; Gerhard Heilig, United Nations, Population Division*

We use data from the 2009 World Urbanization Prospects database and other sources to estimate trends in the number, distribution, and movement of Chinese cities and centroids since 1950. China's cities have witnessed a rapid growth with a difference between coastal cities and inland ones. China's cities tend to be more evenly distributed after 1980 and that larger cities are more evenly distributed than smaller cities. The distance of the geographic centroids for Chinese cities between 1950 and 2009 was within 100km, whereas the population centroid of cities moved by 340km southwestward during this period and the economic centroid (i.e., GDP of cities) moved southward by 200-360km from 1985 to 2005 followed by an eastward movement from 2005 to 2009, reflecting a retreat of migrants from south China due to the recent global economic crisis. However, the trajectory of centroid of social welfare of cities lies 120-230km west of the economic centroid trajectory and 50-150km west of the population centroid trajectory from 1985 to 2009, indicating that social welfare development in cities is behind urbanization and economic growth in contemporary China, which places a challenge for improvement of quality of life for urban residents in China.

### **091. How is internal migration reshaping metropolitan populations in Latin America?: new methodologies and new evidence**

*Jorge Rodriguez, CELADE-Population Division of ECLAC; José Marcos Pinto Da Cunha, Universidade Estadual de Campinas (UNICAMP); Jaime Sobrino, El Colegio De Mexico; Ana Maria Chavez-Galindo, Centro Regional de Investigaciones Multidisciplinarias; Jorge Barquero, Centro Centroamericano de Población (CCP); Daniel Macadar, Facultad de Ciencia Sociales-Universidad de La Republica*

Due to its socio-demographic selectivity, migration can modify the structure of the population in both origin and destination. In the case of Latin American metropolitan areas, this "qualitative" impact was relatively stylized (although it was never measured in a rigorous way) some decades ago when every large city registered huge net in-migration and in-migration flows to the large cities predominantly came from rural areas. The current migratory scenario of Latin American metropolitan areas is different because immigration no longer comes mainly from rural areas but from other cities; moreover out-migration from large cities is growing (in many cases, emigrants outnumber in-migrants). And so, the stylized effect of the past probably does not longer exist. In order to shed some light on this issue, a new procedure based on the so-called "matrix of indicators flow" is used. The "qualitative" impact of internal migration on population composition will be estimated for around 20 cities of 1 million or more residents in six Latin American countries with micro-data from the 2000 and 2010 census rounds (Brazil, Costa Rica, Ecuador, Mexico, Panama and Uruguay). This effect will be measured for sex ratio, percentage of children, percentage of older persons and average education.

### **091. Comparing Internal Migration Around the Globe**

*Martin Bell, The University of Queensland; Elin Charles-Edwards, University of Queensland; John C H Stillwell, University of Leeds; Marek Kupiszewski, Central European Forum for Migration and Population Research; Yu Zhu, Fujian Normal University*

Cross-national comparisons of internal migration are beset by a range of issues arising from inconsistencies in the way migration is measured, and in the spatial and temporal referencing of moves. This paper presents results from the IMAGE project, a collaborative international research program which aims to provide a robust framework for systematic comparisons of mobility and advance understanding of the way in which Internal Migration varies Around the Globe. The paper utilises data from the IMAGE database, a global repository of internal migration data collections, to estimate aggregate migration intensities (all 'permanent' changes of address) over

one and five year periods for a large sample of the 193 UN Member States. We utilise a range of statistical methods to harmonise the data as far as possible for differences in the temporal and spatial frameworks on which the data are collected, and produce the first comprehensive league table ranking countries on overall levels of internal migration, matching similar indices long available for other demographic processes including fertility and mortality. Results reveal marked differences in migration propensities between and within world regions, with relatively low mobility across much of Asia and higher movement intensities in Latin America and More Developed Countries.

#### **091. Urbanisation in India: An Appraisal of 2011 Census Data**

*Ram Babu Bhagat, International Institute for Population Sciences (IIPS); Kunal Keshri, G B Pant Social Science Institute, Allahabad University, Allahabad*

Of late, there has been a change in the thinking of policy makers about urbanization in India. The Eleventh Five Year Plan (2007-12) argued that urbanisation should be seen as a positive factor as urban areas contributes to about 65 percent of the GDP. As India has entered into the 12th Five Year Plan (2012-2017), the urban transition is considered as a major challenge requiring a massive expansion in the urban infrastructure and services. Under this backdrop, the results of the 2011 census assume enormous significance in enhancing our understanding about the magnitude, growth and inter-state variations in the levels and tempo of urbanization. Urbanisation has increased faster than expected as per 2011 Census. This has reversed the declining speed of urbanisation during 1980s and 1990s. Also, for the first time since independence, the absolute increase in urban population was higher than rural population. This paper attempts to study the trend, pattern and components of urban population growth namely the contribution of natural increase, rural to urban classification and migration in the light of 2011 Census results.

#### **092. Are Lifestyle Diseases a Matter of Concern for Elderly Women: A Study of Older Old and Oldest Old Population**

*Javeed ahamad A Golandaj, International Institute for Population Sciences (IIPS); Kshipra Jain, International Institute for Population Sciences*

The condition of elderly women is more vulnerable given the nature of Indian society as any other developing countries. The present study aims at identifying the elderly women suffering from life style disease (LSDs) and to understand the factors associated with selected diseases in India. Using IHDS, 2004-05 data we have analyzed three major LSDs namely High BP, Heart disease and Diabetes. This study is restricted to elderly women who are 60 years and above. The study has employed bi-variate and multivariate analysis to find out the association between socioeconomic & demographic background and selected LSDs among elderly women in India. The results shows that a high proportion of elderly women (38%) suffer from the problem of blood pressure followed by diabetes (18%) and less than (10%) of them report heart problems. The LSDs are equally prevalent in urban area, high caste groups, educated and non-poor section of the society.

#### **092. Gender inequalities in living conditions and family support among older persons, the case of Egypt**

*Laila Nawar, Free lance consultant*

Like other developing countries in the midst of demographic transition, Egypt is experiencing changes in the relative distribution of children, population in the working ages and older persons. The proportion of older adults (60 years +) was 6% in 2006 and is expected to be 12% in 2030. A household based survey was conducted in 2006 to collect information for the first time on living conditions and informal support received by older adults. The study sample included about 2000 persons 60 years and over of both sexes.

Findings reflected striking gender gaps in demographic, social, economic and health conditions. Older males were more likely to be currently married, better educated, better economically secured and enjoyed better health conditions than older women. They were also more likely to go for outdoor recreational activities. Women were more likely to be widowed, living alone in their households. Many of them were living in extended families with married children, with implications on their autonomy. Women were also less likely to receive functional care and assistance in instrumental activities of daily life from family members compared to men. Some recommendations to promote quality of life of older adults were raised.

### **092. Social Security Pensions for Mexican Elderly Women**

*Abigail Vanessa Rojas Huerta, Independent Consultant; Roberto Ham Chande, El Colegio de La Frontera Norte*

A main feature of demographic ageing is the increased presence of women. Next to this evident fact it is also shown that because of gender differences elderly women meet worst health conditions and higher risks of widowhood, social handicap and economic dependence. Economic security in old age depends on several factors, including the protection provided by social security. Coverage of the contributory pension system for elderly women is lower than men's because of lower labour rights and shorter periods of contribution that are neglected in the planning and legislation of social security. This paper analyzes the individual, familiar, and contextual factors that determine how women 60 and over access to a social security pension. Data comes from the National Survey of Employment and Social Security 2009. It is highlighted that only 17.6% get a pension and that factors such as age, marital situation, education level, number of children, contributions and the degree of urbanization of the place of residence determine the type and characteristics of the pension.

### **092. Transition into Widowhood and Functional Health**

*Sarinnapha Vasunilashorn, Princeton University; Kate H. Choi, University Of Western Ontario*

Widowhood is one of the most stressful life events, resulting in declines in psychological wellbeing and increases in mortality risks. Although the consequences of widowhood on mortality and psychological wellbeing are well-documented, little is known about the impact of widowhood on physical health. We assess how widowhood influences physical wellbeing and identify the mechanisms underlying the relationship between widowhood and functional health. Using data from the Wisconsin Longitudinal Study (WLS), we employ ordinary least square models to (1) compare the functional health of married and widowed persons and (2) examine the extent to which socioeconomic circumstances, relationship quality, and availability of social support explains the health differentials between them. Widowed persons have worse functional health than their married counterparts, net of demographic characteristics, socioeconomic status, marital quality, and availability of other forms of social support. The worse functional health of widowed persons is largely attributable to the fact that they are more likely to be in low quality marriages and to have cared for an ailing spouse prior to their death.

### **093. Age Structure, Education and Economic Growth**

*Wolfgang Lutz, International Institute for Applied Systems Analysis (IIASA)*

The effect of changes in age structure on economic growth has been widely studied in the demography and population economics literature. The beneficial effect of changes in age structure after a decrease in fertility has become known as the demographic dividend. In this paper we reassess the empirical evidence on the associations among economic growth, changes in age structure, labor force participation and educational attainment. Using a global panel of countries, we find that once the effect of human capital dynamics is controlled for there is no evidence that changes in age structure affect labor productivity. Our results imply that improvements in

educational attainment are the key to explaining productivity and income growth and that a substantial portion of the demographic dividend is an education dividend.

### **093. Common link between policies conducive to both fertility transition and demographic dividend**

*Anrudh Kumar Jain, Population Council*

A window of opportunity for fast economic growth is automatically created by sustained fertility decline. However, its realization depends upon the quality (education and skills) of the labor force and economic policies of the day. Fertility decline from about six to 2.6 births between the 1960s and 2008 in India has now raised the prospects of demographic dividend. However, the timing and the pace of fertility decline has not been uniform among the major states. Consequently, the potential for reaping the benefits of demographic dividend also differs among states. This paper traces the common link between policies that contribute to fertility transition as well as create the right kind of environment for reaping the benefit of demographic dividend. The data used for major states in India suggest this link to be the early investment in social development. For example, southern states made earlier investments in social development and experienced fertility transition early. They now have better educated labor force and hence are ready to transform the window of opportunity in to economic growth. However, northern states did not invest adequately in social development early and are now lagging behind in both fertility transition and the quality of the labor force. They are not ready to reap the benefits of demographic dividend.

### **093. La fenêtre démographique en Méditerranée**

*Maria Carella, University of Bari; Alain Parant, Institut National d'Études Démographiques (INED)*

La fenêtre démographique identifie le délai durant lequel les pays peuvent maximiser les avantages de l'évolution favorable de la structure par âge de leur population. La communication a pour ambition de repérer les éventuelles périodes d'ouverture et de fermeture de la fenêtre démographique, ainsi que la durée de celle-ci pour l'ensemble des pays du Bassin méditerranéen sur la période 1950-2010, avec une extension à l'horizon 2100 ; en se fondant pour ce faire sur les approches les plus couramment privilégiées du concept. La première partie sera consacrée à la présentation et à l'analyse de l'évolution des composantes de la dynamique démographique (fécondité, mortalité et migrations) au cours des 60 dernières années. La deuxième partie cherchera à estimer pour les différents pays les périodes d'ouverture et de fermeture de la fenêtre démographique. La troisième partie visera à repérer d'éventuelles futures fenêtres démographiques à l'horizon 2100. Les données utilisées seront celles des Nations unies.

### **093. The life-cycle model of income, consumption and saving in Mexico**

*Isalia Nava-Bolaños, Universidad Nacional Autónoma de México; Roberto Ham Chande, El Colegio de La Frontera Norte*

In recent years the analysis of relationships between changes in age structure and economic performance has attracted extensive attention. Children require intensive investment in health, nutrition and education, prime-age adults supply labor and savings and the elderly require expenditures on health care and retirement income. In this sense, an age structure concentrated at prime-age adults reduces the dependency ratio, and is seen as an advantage characterized as a demographic window. This research describes the life-cycle income, consumption and saving patterns of Mexican households. If the life-cycle hypothesis is correct, the age profile of income, consumption and saving should be relatively higher for the young than the old and we could accept the supposition of an optimistic link between demographic change and saving in the aggregate economy. We construct a pseudo-panel from the Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) between 1994 and 2008. Results show that the effects of age structure on

consumption and saving rate are not coherent with the life-cycle hypothesis; there is no evidence of dissaving among the old age. Findings also show cohort and period effects.

**094. A New Approach to Indirect Estimation of Child Mortality: Application to Malawi**  
*Agness Amouzou, Johns Hopkins University; Kenneth H. Hill, Harvard University*

Standard techniques of indirect estimation of child mortality use data from summary birth histories consisting of only two questions - number of children ever born alive and the number of children dead. However the estimation is based on several assumptions about fertility and mortality patterns, and rates computed for recent periods are biased. We propose and apply an innovative approach based on imputation of full birth histories onto summary birth histories. The resulting imputed full birth history is used to calculate child mortality rates using standard life table procedures. We apply the approach to data from the Malawi 2008 Population Census and the 2004 and 2010 Demographic and Health Survey datasets. Preliminary results are promising, with most of the imputed child mortality rates falling within the 95% confidence intervals of the rates directly computed from the 2010 DHS survey. In addition, choice of the existing full birth history data for the imputation did not appear to affect the resulting mortality rates computed from the imputed full birth history data.

**094. Estimating levels and trends in under-5 mortality: an assessment of biases in data series and an improved estimation method**

*Leontine Alkema, National University of Singapore; Jin Rou New, National University of Singapore*

The under-5 mortality rate (U5MR) is an important measure of the well-being of a country's children, and its estimation is particularly critical as we approach the deadline of Millennium Development Goal 4 to reduce U5MR by two-thirds between 1990 and 2015. However, for the great majority of developing countries without well-functioning vital registration systems, estimating levels and trends in under-5 mortality is challenging, not only because of limited data availability but also because of issues with data quality. Global estimates of child mortality are often constructed without accounting for potential biases in data series which may lead to inaccurate point estimates and/or uncertainty intervals. We propose a Bayesian spline regression model for assessing levels and trends in the U5MR, whereby biases in data series are estimated for each source type through the inclusion of a multilevel model to improve upon the drawbacks of current methods. Preliminary results show that the proposed model is able to flexibly capture changes in U5MR over time and gives point estimates and uncertainty intervals that reflect potential biases in data series.

**094. Impact of HIV on estimates of child mortality derived using the summary birth history (CEB/CS) method**

*Rob E Dorrington, University of Cape Town; Themba Mutemaringa, University of Cape Town*

This study investigates the extent of bias in the estimates of infant and under-five mortality derived from the Brass children ever born children surviving (CEB/CS) method as a result of HIV/AIDS. The bias is estimated by comparing the infant and under-five mortality derived from the CEB/CS method with direct estimates from the full birth history data from recent DHS data. The estimates from the full birth history data have been corrected for bias due to HIV/AIDS using the method used by IGME.

IMRs and U5MRs derived from data from women aged 25-39 were underestimated by up to 15% in the six countries studied. Estimates of bias in data derived from women aged 20-24 differed between countries. The results from these younger women could be affected by differences between the indirect and direct methods of estimation. In two of the countries, estimates of overall bias of more than 30% were observed. The bulk of the overall bias is due to the effect of HIV on

the survival of mothers and their children. The choice of model life table does not introduce much bias, especially in estimates of under-five mortality where the absolute bias in most countries was less than 3%.

#### **094. Improved Analysis of sibling survival data Taking Into Account Survivor Bias, Zero-surviving reporters and Recall Bias**

*Alison Levin-Rector, NYC Department of Health and Mental Hygiene; Haidong Wang, University of Washington; Julie Knoll Rajaratnam, Program for Appropriate Technology in Health (PATH); Carly Levitz, University of Washington; Christopher Murray, University of Washington; Austin Schumacher,*

In the absence of a well-functioning vital registration system to track mortality in a population, health planners often rely on routine health surveys to provide this most basic health information. Sibling survival histories, where a survey respondent is asked about each of his or her siblings' births and, if applicable, deaths, provide a direct way to estimate adult mortality by survey. The purpose of this paper is to refine the methods which account for the selection bias, zero-surviving reporters and recall bias inherent in these surveys to generate plausible estimates of adult mortality rates even in the presence of a relationship between family size and adult mortality. We have implemented changes to the previous method, referred to as the Corrected Sibling Survival (CSS) method, such that it (1) uses appropriate survival weights that account for the study design, and (2) recovers the mortality experience of the families that are not represented because none of the siblings is alive and eligible to respond to the survey. We validate these methodological developments in a range of simulation environments. We also present new ways of adjusting for recall bias and handling sparse data in survey designs where the age range of the respondents is narrower than the age range desired for estimation.

#### **095. An analysis of life event sequences of China's young adults**

*Qianhan Lin, Asia Research Institute, National University of Singapore; Wei-jun Jean Yeung, National University of Singapore*

China, having undergone unprecedented socioeconomic transformation and state policy interventions since the Chinese Communist Party took over in 1949, provides a fascinating laboratory for studying how lives of young people have been shaped by different historical contexts. Preliminary evidence based on the Chinese General Social Survey (CGSS) suggest that today's young Chinese are exploring new pathways to adulthood, including cohabitation and premarital sex. Using the 2008 CGSS data, we propose a holistic approach of examining the transitions to adulthood by employing the optimal matching technique. This method takes into account multiple trajectories simultaneously, and allows us to investigate further the orderliness and disorderliness of lives of Chinese young adults.

#### **095. Early Work Experience and Schooling of Young Adults in Metro Cebu, Philippines**

*Socorro A Gultiano, University of San Carlos Office of Population Studies Foundation; Delia Carba, USC Office of Population Studies Foundation; Judith Borja, USC-OFFICE OF POPULATION STUDIES FOUNDATION*

Using panel data from 1,878 participants of the Cebu Longitudinal Health and Nutrition Survey (CLHNS), this study examines early work experience of Filipino youths aged 20-22 years and the possible implications of this experience on their educational attainment, current work status, and health. Seventy two percent of the youth reported having worked at or before age 16 years (median age at first work is 13), of which 81% worked while studying and 19% stopped schooling in order to work. Of those who were working at ages 14-16, 46% were working for pay, while 54% were unpaid family workers. Gender differences were apparent in these experiences, thus gender-stratified analysis was employed. At the bivariate level, early work experience in conjunction with

schooling status is shown to be associated with educational level, work status and earnings, and psychosocial and nutritional wellbeing at ages 20-22 years. Multivariate linear and multinomial logistic regression analyses took into account possible confounding factors such as mother's age, education, number of living children, household assets and the community's level of urbanization. Preliminary analysis has shown that early work experience demonstrated adverse and gender-specific influences on some aspects of human capital formation among Filipino young adults.

**095. Labor trajectories and transition to adulthood in Latin America: the risk of being young and a newcomer in the labor market**

*Fiorella Mancini, INSTITUTO DE INVESTIGACIONES SOCIALES- UNAM*

Many youth in Latin America lack clear occupational opportunities. This uncertainty in achievement a regular job may affect transitions to adulthood in terms of social roles related with age and stage of life course (involving prolonged education, frequent job changes, postponement of events, family dependence, etc.). The purpose of this paper is to ask whether increasing labor insecurity in local labor markets of Latin America have produced a fundamental shift in transitions to adulthood. The aim is to examine how relationship between job insecurity and transition to adulthood is filtered by educational achievement and gender in different countries. Central hypothesis is that the impact of labor insecurity on transition to adulthood is experienced differently in Mexico and Argentina, due to institutional, family systems and educational differences. We use nationally representative data from a longitudinal study to examine how uncertainty in labor trajectories of young workers affects transitions of the life course. Results suggest that youth with precarious labor trajectories handles a great heterogeneity of transitions to adulthood, supporting the view that labor insecurity heightens the individualization of life course.

**095. Stuck for life? The Long-Term Consequences of Initial Employment in the Informal Sector, with Evidence from Indonesia**

*John Giles, The World Bank; David L Newhouse, The World Bank; Firman Witoelar, SurveyMETER and The World Bank*

This paper provides insight into the costs of coping with employment shocks through informal sector employment by examining the long-term impact of completing high school during a recession on both earnings and the ability to find formal sector work. The context is Indonesia, which in 1998 suffered one of the world's most severe downturns in the last thirty years. We ask: what are the long-term consequences for life outcomes (employment, earnings, consumption) of early work experience in the informal and self-employed sectors? Were crisis-affected youth more or less likely to suffer adverse consequences from beginning their careers in the informal sector than youth taking a first job in the informal sector during other periods? We use individual, family, and community data from all rounds of the Indonesia Family Life Survey (IFLS), take advantage of the education, employment, and migration histories available in the data, and combine them with characteristics of local labor markets and the macro economy, constructed from the annual national labor force survey (the SAKERNAS), to answer these questions. We use local labor market and macroeconomic shocks at the district at the time important schooling and initial employment decisions were being made to identify the effects of these decisions on long-term individual outcomes.

**096. A prospective study of the contribution of migration to school drop-out rates amongst children made vulnerable by HIV/AIDS in eastern Zimbabwe**

*Constance Nyamukapa, Biomedical Research & Training Institute & Imperial College London; Laura Robertson, Imperial College London; Paradzai Mushore, Biomedical Research & Training Institute; Simon Gregson, Imperial College London*

Background Orphans and other children made vulnerable by HIV (OVC) in sub-Saharan Africa have been found to be at increased risk of moving household and dropping out of school. Further work to investigate the relationship between child migration and school enrollment is required. Methods We used multivariate logistic regression models and data from two rounds of a cohort study of OVC in Manicaland, Zimbabwe to investigate the effect of migration on school enrollment after adjusting for other demographic impacts of the HIV epidemic (e.g. orphanhood). Results 591 children aged 6-18 years, who were enrolled in school, were enumerated and followed-up between June 2003-November 2004 and July 2004-March 2006. Migration was significantly associated with dropping out of school (AOR 7.02; 95% CI 2.76-17.87;  $p < 0.001$ ) after adjusting for orphan status, relationship to primary caregiver and household wealth. Orphan status and relationship to primary caregiver were not significant, independent risk factors for dropping out of school.

Conclusion: Migration is a significant, independent risk factor for dropping out of school amongst OVC in Manicaland. Interventions are required that improve household stability to reduce child migration and also that target recently migrated children to ensure rapid return to school.

### **096. Admission et Abandon scolaires des enfants de 6-14 ans au Bénin : Niveaux, Dynamiques et Déterminants**

*Mouftaou Amadou Sanni, Centre de Formation et de Recherche en matière de Population (CEFORP)*

La question de l'admission scolaire des enfants et de la rétention des écoliers dans le système éducatif a été plus souvent examinée selon le sexe. On s'intéresse peu aux différences entre filles ou entre garçons, selon le statut dans le ménage et le milieu de résidence. Tirant profit des deux derniers recensements de la Population et de l'Habitation (RGPH) du Bénin de 2002 et de 1992, cette communication examine les fréquences d'enfants non scolarisés et d'enfants déscolarisés ainsi que leurs déterminants. Les résultats obtenus indiquent que le Statut de l'enfant au sein du ménage est central dans l'explication des taux de non scolarisation et des taux de déscolarisation. Toutefois, cette variable à elle seule n'est pas suffisante à l'explication de la fréquentation scolaire actuelle ou non des enfants au Bénin. Sa force explicative n'est significativement réelle qu'en présence du sexe et du milieu de résidence, indiquant ainsi la nécessité d'un ciblage des actions de promotion de la scolarisation systématique au primaire.

### **096. Allocations en ressources et efficacité des écoles primaires : cas du Burkina Faso et de la Côte d'Ivoire**

*Glebelho Lazare Sika, ENSEA; Gouda Roland Mesmer Mady, ENSEA*

A l'instar de la plupart des pays francophones d'Afrique subsaharienne, qu'ils soient sahéliens ou côtiers, l'allocation en ressources des écoles primaires de Côte d'Ivoire et du Burkina Faso semble bien trop souvent dictée par une rentabilité économique. En plus des villes qui sont mieux nanties en ressources que les zones rurales, les régions abritant les plus grandes villes sont celles qui bénéficient de la majorité des ressources. Tels sont quelques résultats issus de la classification des écoles selon leurs dotations en ressources. Celle-ci fait suite à l'objectif visant la comparaison de l'allocation en ressources des écoles primaires par rapport aux résultats des apprentissages des élèves. De même une classification des élèves selon leur niveau socio-économico-culturel a été effectuée. Le calcul des scores d'efficacité par la méthode DEA et la modélisation de ces derniers par un modèle Tobit ont permis de mettre en exergue l'absence de lien entre dotations en ressources et efficacité dans les deux pays. D'ailleurs, la stabilité du lien entre ressources et efficacité des écoles n'est toujours pas assurée d'un pays à un autre.

## **096. Determinants of Effective Completion of Primary level Education in India, 1986-2008: A Multilevel Analysis**

*Chandan Kumar, Indian Institute of Technology Roorkee; S. P. Singh, Indian Institute of Technology Roorkee (IITR); D. K. Nauriyal, Indian Institute of Technology Roorkee (IITR)*

This study examines the influence of possible individual and household characteristics as well as the state level factors on the chances of completion of primary level education within 10-15 years of age (i.e. effective completion) in India with temporal perspective. The study is based on the information collected by the National Sample Survey (NSS) in its three rounds of survey canvassed during 1986-87, 1995-96, and 2007- 2008 in India. Adjusting for potential factors, the study found no significant change in the probability of effective completion of primary level education in India over more than two decades. A host of individual/household factors was examined having strong influence compared to state level educational, institutional and developmental factors.

## **097. Examining the effectiveness and impact of integrating comprehensive family planning into community-based primary health care services in three rural districts of Tanzania: The Connect Project**

*Colin Baynes, Columbia University/Ifakara Health Institute; Godfrey Mbaruku, Ifakara Health Institute; Emmanuel D Thuway, Ifakara Health Institute; Selemani Mbuyita, Ifakara Health Institute; James F. Phillips, Columbia University*

The Connect Project in Tanzania a strategy for scaling-up a field trial to become a national program. It operationalizes and evaluates the impact of a community-health worker program aimed at reducing child mortality through community-based primary healthcare services, including case management of childhood diarrhea, pneumonia and malaria. It commenced in 2011 as a randomized controlled trial with features to study the effects of implementation on health systems strength. Faced with high unmet need for contraception in the study population, Connect has integrated family planning into its primary health care operation. This is scaling up the program in phases guided by evidence. In the current paper, findings from a formative micro-pilot and qualitative case study impart lessons learned and clarify the determinants and processes of successfully integrating family planning into the Connect service system. Evidence from operations research demonstrates the relative quality, productivity and coverage achieved by the intervention in settings where family planning has been integrated and not. An end of project multi-level impact analysis is presented that projects the impact of distance to service point on fertility in areas exposed and unexposed to Connect services, forecasting fertility impact if results are extended to scale.

## **097. Integration of Family Planning Referral Messages into the Expanded Program on Immunization Services**

*Mi-Suk Ahn, Statistics Korea; Rachel Micarandayo, Provincial Health Office, Misamis Occidental Philippines; Leslie del Puerto Escalada, RTI LuzonHealth; Rosario Marilyn S Benabaye, RTI HealthGov; Alejandro N Herrin, RTI International*

**Background.** An opportunity for personal contact with women to provide family planning referral message is when they go to health facility for the immunization of their children. Past studies have shown that such an approach can effectively increase the number of women who accept modern family planning (FP).

**Methods.** In 2011, a study was conducted in Misamis Occidental, Philippines where 42 immunization centers were randomly assigned to treatment (n=21) and control groups (n=21). In the treatment sites, mothers with unmet need for FP were provided referral message that simply said that the health facility provides modern FP services, and would they like to visit to learn more about modern FP. If yes, a schedule was set for their visit. In the control sites no referral messages

were given. After six months the same mothers were interviewed to determine their current family planning status.

Results. Analysis on 1,635 women who had complete information in both surveys showed a net difference in CPR between treatment and control sites of 9.8 percentage points (11 percentage increase in the treatment site minus 1.3 percentage point increase in the control sites). Using a difference-in-difference analysis of panel data, this net difference was statistically significant at the 1% level.

#### **097. Use of Postpartum Family Planning in Urban Senegal: The Role of Integrated Services**

*Ilene Speizer, University of North Carolina at Chapel Hill; Jean Christophe Fotso, Concern Worldwide USA; Chinelo Christine Okigbo, University of North Carolina at Chapel Hill; Cheikh Mbacke Faye, African Population Health and Research Center; Cheikh Seck, IntraHealth.org*

Although the majority of postpartum women indicate a desire to use contraceptives, family planning methods are often not offered to, or taken up by, women after delivery or in the first year postpartum. This study examines exposure to family planning services at the time of delivery and at an immunization appointment to determine if these points of integration are associated with greater use of postpartum family planning. A representative sample of women ages 15-49 was surveyed from six cities in Senegal in 2011. This study focuses on the women who were within two years postpartum (weighted n=1879). We show that women who received family planning information at the time of delivery are more likely to be using modern family planning postpartum than their counterparts who also delivered in a facility but did not receive such information.

Exposure to family planning at an immunization visit was not significantly related to postpartum family planning use. Another key finding is that women with greater self-efficacy are more likely to use modern family planning. Programmatic recommendations are made for improving integration of family planning into maternal and child health services with the goal of increasing postpartum women's use of family planning in urban Senegal.

#### **098. 40 Years of Planned Family Planning Efforts in India**

*Aalok Ranjan Chaurasia, Shyam Institute; Ravendra Singh, Ministry of Statistics and Programme Implementation*

This paper makes an objective assessment of the planned family planning efforts in India organised under the National Family Welfare (Planning) Programme during the period 1970-71 through 2010-11. The assessment covers the conceptual foundations of official family planning efforts, administrative capacity and organisational efficiency of the National Family Welfare (Planning) Programme, outputs of official family planning efforts in terms of needs effectiveness, capacity efficiency, goals effectiveness and realised efficiency of the National Family Welfare (Planning) programme, and impact of official family planning efforts in terms of realisation of demographic targets and goals. The analysis, based primarily on the services statistics of the National Family Welfare Programme, suggests that, at the policy level, there has been considerable dilution in the official family planning efforts which has implications for organising family planning activities at the grassroots level and the impact of these efforts in terms of reduction in the birth rate and population stabilisation. The paper argues for reinvigorating the official family planning efforts and proposes a framework for the purpose.

#### **098. Achieving the London FP Summit Goal through Voluntary, Rights-based FP: What Can We Learn from Past Experiences with Coercion?**

*Karen Hardee, Futures Group; Shannon M Harris, Bill & Melinda Gates Foundation; Mariela Rodriguez, Futures Group; Jan Kumar, EngenderHealth; Lynn Bakamjian, International Health and Development Consultant; Karen Newman, Consultant; Joseph Brown Winchester, The Bill & Melinda Gates Foundation*

The London FP Summit on July 11, 2012 galvanized high level support to reach 120 million new family planning users by 2020. Such growth in FP users would be unprecedented. The theme of rights was emphasized at the FP Summit. Despite this firm global commitment to voluntary, rights-based family planning programming, instances of coercion have occurred in FP programs. These experiences have made some wary of the potential for coercion to reemerge in FP policies and programs. A recent court ruling in Namibia has highlighted the pressures faced by HIV-positive women to stop childbearing, reminiscent of experiences in the West of targeting disabled women with contraception. It is important to fully understand each situation and how it occurred to develop approaches to ensure that these experiences are not repeated.

The paper examines instances of coercion in FP to understand the context, the type of coercion, how it was uncovered and how it was addressed. Using these examples, the paper offers recommendations for policy and program steps to ensure voluntarism in family planning and adherence to a rights-based approach as countries scale up programs to reach the ambitious goal of FP2020.

### **098. Support to the efforts of the local authorities' commitment in reducing maternal mortality , Experience of Katanga in DRC**

*Jeannette Kakou Bassimie Danho, UNFPA*

The Katanga Province in the south-east of DRC covers an area of 496,877 square kms with an estimated population over 11,462,290 inhabitants out of 68% are under age of 25 ; maternal mortality rate is high 612 per 100,000 live births; the modern CPR is low 2,3%; one in four adolescent girls aged 15-19 has already given birth or been pregnant. HIV prevalence rate is 5,6%. However, local authorities' financial commitment to advance ICPD agenda is strong. Thus, UNFPA decided to support provincial government's initiatives where financial commitment is expressed. Three types of programs were identified: i) Maternal and newborn health; ii) Integrating Youth Friendly Services and HIV prevention; iii) Availability of data for development. The key challenge faced was the limited resources of UNFPA and youth community as well. Advocacy and BCC activities, building alliances with media professionals, partnerships, resources mobilization and auto financing were implemented. From 2009 to date, the local government has invested 15,000,000USD for renovation/ construction of over 15 maternity wards and health facilities, 383,000USD for construction of the multifunctional youth center including promotion HIV VCT and 262,901USD for the setting up of a population statistics center to avail accurate data in prevision of the census.

### **098. USAID Strategies for Repositioning Family Planning in Sub-Saharan Africa: their Results and Remaining Challenges**

*Jacob Adetunji, U.S. Agency for International Development (USAID); Carmen Tull, USAID; Alexandria Todd-Lippock, USAID*

Although the international family planning program at USAID had enjoyed priority attention and funding from its inception in the 1960s until the time of the Cairo Conference in 1994, by 2001, its funding had stagnated at low levels for five years; the Mexico City Policy had been imposed; HIV/AIDS was gaining ascendancy in funding within the Agency; and both fertility levels and modern contraceptive prevalence rates (MCPR) in several sub-Saharan African (SSA) countries were stagnating. Some scholars even suggested that the international family planning movement was at the stage of fragmentation and decline. Consequently, USAID in collaboration with the World Health Organization and other partners began an initiative to reposition family planning in SSA. Within ten years, the initiative had achieved numerous impressive results: the annual funding for family planning at USAID increased by over 50%; MCPR saw unprecedented increases in several SSA countries; increased funding commitments were coming in from host country governments and international donors; and family planning now enjoys greater visibility

and is recognized as a key variable for economic development. This paper's goal is to explain the strategies adopted by USAID to reposition family planning, discuss the key achievements, and highlight the challenges that remain

**099. Adolescent mortality in South Africa: An analysis of unnatural and violence causes of deaths by sex, 2006- 2009**

*Nicole De Wet, University of the Witwatersrand*

Despite South Africa being a peaceful democracy for the past 18 years, mortality due to unnatural and violent causes still occur among the youth. However, this is not specific to South Africa; with developed countries experiencing the same trend. Christoffel (1994) found that death due to unnatural causes, specifically related to violence, had increased especially among the youth. South Africa is now moving towards the same transition that is currently experienced by developed nations in the world: violent deaths as a major cause of death amongst the youth (Norman, et al, 2007). With this in mind, this paper aims to examine the different levels of male and female adolescent mortality due to 5 unnatural causes of death. Data from the South African death registry is analysed for the years 2006- 2009. Cause-specific mortality rates, proportional mortality ratios and life table techniques are used. Results show adolescent females are dying from 'events of undetermined intent', 'transport accidents' and 'self-harm' causes more than males. The selected causes of death are contributing up to 27% of all adolescent male mortality and almost 12% of all female mortality in 2009. Finally years of potential life lost due to 'assault' are increasing among females.

**099. Declining Sex Ratio of the Child Population in India: An Assessment**

*Rajesh Kumar Rai, Tata Institute of Social Sciences (TISS); Prashant Kumar Singh, International Institute for Population Sciences (IIPS); Sulabha Parsuraman, Former Professor and Head, International Institute for Population Sciences*

If the omission/misreporting of ages of male/female children is assumed to be equal, child sex ratio is the result of sex ratio at birth and sex differential in mortality. This study aims to understand the impact of both the sex ratio at birth and sex differential in mortality on the change in child sex ratio during 2001-2011 in India and its major states. The result shows that in 2011, at the national level, the skewed child sex ratio could be explained due to distortion in sex ratio at birth by two-thirds and in high female child mortality by about one-third. Whereas, in 2001, the contribution of sex ratio at birth was two-fifths and the contribution of high female child mortality was three-fifths towards determining the child sex ratio.

**099. Explaining Gender Differentials in Child Mortality in India: Trends and Determinants**

*Shrikant Deshikendra Kuntla, International Institute for Population Sciences; Srinivas Goli, International Institute for Population Sciences (IIPS); Kshipra Jain, International Institute for Population Sciences*

This study aimed to investigate the progress in gender differential in child mortality in India and factors explaining it. Based on the analyses of three rounds of National Family Health Survey data the findings suggest that there is a positive change in the scenario of child mortality from 1992 to 2006 where, though, largely female child is at higher risk but there is a decline in the risk. The decomposition analyses suggest that demographic variables such as breastfeeding, birth order, antenatal care and mother's age emerged as critical contributors for excess female child mortality compared to socioeconomic variables. Overall, the results foster that the gender discrimination is mainly operating through provision of breastfeeding and negligence of higher order female births. The study also foster that discrimination of higher order female birth mainly operates in terms of health care provisions and allocation of intra-household resources.

**099. Sex differentials in infant and child mortality in a context of fast mortality decline. The Brazilian case (2000 - 2010)**

*Laura L. Rodriguez Wong, Federal University of Minas Gerais, CEDEPLAR; José A. Magno de Carvalho, Universidade Federal de Minas Gerais; Juliana Vasconcelos de Souza Barros, Centro de Desenvolvimento e Planejamento Regional (CEDEPLAR); Gabriela de Oliveira Bonifacio, Centro de Desenvolvimento e Planejamento Regional (CEDEPLAR)*

This paper evaluates the mortality gap between sexes that has traditionally favoring females well before birth. Data used are from demographic censuses and vital statistics. Estimates refer to most recent Brazilian data up to 2010. Indicators used are essentially, infant and child mortality by sex; mortality sex ratio (or male over-mortality –MOM relative to women) and sex ratio of the population under age 10. ICM is evaluated using the Brass method on children survivorship. The traditional technique indicates at some mother's age that proportion of surviving children is higher among sons than daughters. Similar evidences are found using vital statistics where they are reliable: among children from women at the end of their reproductive age we found that male IM is lower than female IM for the 2008-2010 period. Final version of the paper will show robustness of these new evidences of reversal trends in the gender/sex differences in ICM. This trend could be associated to the fast decline in ICM stimulated by huge social investments and monitoring of social programs like de MDG. Thus, in countries like Brazil and Peru, where efforts to meet the MDG has been recognized, gender gap should be in the process of narrowing.

**100. Regional Analysis of Population Aging in the Asia and the Pacific Region: Trends, implications, policies, and actions**

*Junko Sasaki, UNFPA*

Population is ageing rapidly in the world and in Asia and the Pacific. We aim to describe its situation today and the expectations for 2025 and 2050, including the demographic profile of the elderly, implications of the ageing process, and the policy responses and actions taken. Firstly, regional trends in East Asia, South East Asia, and selected countries in the regions, as well as its dependency and support ratio are described, paying special attention to the feminization of ageing, labor force participation, living arrangements, rural and urban differences and rural-urban migration. Ensuing implications on population dynamics, changes in the traditional family support structure, poverty incidence, lack of pension systems, higher vulnerability for older women, economic and financial dimension of ageing, and its second demographic dividend are discussed. As a conclusion, we focus on how we can adjust to this ageing world at international and national levels, taking into account regional cases and the needed support, including what UNFPA, United Nations Population Fund, has been working on, and what the Asian countries can offer, based on our own experiences, through the global ageing process.

**100. Rural women in advanced age: Evidences in 2009 Elderly Living Condition Survey of Yi-Lan County, Taiwan**

*Peishan Yang, NTU College of Social Sciences*

Taiwan has experienced speedy population aging, especially in rural counties. Studies to invest the living conditions of elderly people in Taiwan mostly focus on a national level until recent years. The 2009 Elderly Living Condition Survey was the first survey done in Yi-Lan, a rural county of Taiwan, which applies similar questionnaire as the national surveys, to enable dialogue of a local perspective versus a national perspective on rural women in advanced age. This study applied stratified random sampling method. A total of 814 persons aged 65 years of age or older was surveyed in the study. A sub-sample of 203 women aged 80 years or older will be analyzed regarding their family life, social life, health, and disability in this article. The results will be compared with men in advanced age, younger women, and Yi-Lan women in advanced age in a similar nationwide survey.

### **100. Three-Generational Support Relationships in East Asia: Development and Explanation of A Typology**

*Sang-Wook Kim, Sungkyunkwan University*

One of the concerns running through studies of intergenerational support exchanges is the development and explanation of a typology of three-generational (G1, G2, & G3) support relationships. To be precise, what types of support provisions to G1 and G3 are there and, more important, what kinds of mechanism underlie to help explain the variation in different types of support provisions? While the bulk of literature kept addressing this issue, rarely has evidence been documented in non-Western societies, in particular, and we are thus left with a void understanding about the multiplicative support provision relationships among the three generations. Using the 2006 EASS (East Asian Social Survey) family module survey data, this study attempts to develop the typology and see what kind of characteristics, which mostly concern the resource and need factors of the respective generation, serve to account for different types of support provisions. In doing so, this study wants to go beyond previous studies by introducing the three crucial components of family lineage (paternal and maternal), support dimension (financial and instrumental), and cross-national comparison (Korea, Japan, and China). Given that the three components have never been properly explored in East Asian context, this study is believed to promote an added understanding in this area.

### **101. Diffusion of fertility decline: A spatial multi-level analysis of the Swedish fertility transition using micro-level census data 1880-1900**

*Francesco Scalone, Department of Statistical Sciences - University of Bologna; Martin Dribe, Lund University; Sebastian Klusener, Max Planck Institute for Demographic Research*

The aim of this paper is to study spatial aspects of declining net fertility in Sweden in the initial phases of the transition. The decline of fertility has for a long time been a major theme in historical demography. Much of the literature has focused on the demographic aspects of the decline, aiming to chart the process at the macro level. Much less attention has been given to micro-level analyses and spatial patterns. Micro-level data from three Swedish censuses (1880, 1890, 1900) are linked to a historical parish-level GIS-shapefile to include spatial information (in total around 2400 time-constant parishes). We estimate multi-level regression models, controlling both for individual-level and contextual parish-level covariates. As dependent variable we use the child-woman ratio, which represents an indirect measure of fertility when only census data are available. This approach is combined with spatial analysis methods such as the Moran's I-test for spatial autocorrelation of the residuals and spatial smoothing techniques. We chart spatial clustering of net fertility over time and analyze spatial contiguity in the diffusion of this behavioral change within the Swedish society. Preliminary results show strong spatial clustering of fertility variation also after controlling for individual and community level determinants.

### **101. Spatial diffusion in the Belgian fertility transition. Estimating neighbourhood effects using event-history analysis**

*Rafael Costa, Université Catholique de Louvain*

The purpose of this study is to estimate the effect of spatial diffusion on fertility behaviour changes in Belgium during the First Demographic Transition at a fine-scale geographic level. The analyses lie in a new data series from 1886 to 1913 providing yearly fertility indicators at the municipality level. Firstly, this data series will be used in a preliminary analysis of the evolution of fertility behaviour in order to produce a first overview of spatial patterns, diffusion effects and barriers to diffusion. This preliminary analysis is expected to reveal local particularities of fertility changes that are undetectable at higher geographic levels. Secondly, the yearly data series will be used in event-history models in order to estimate neighbourhood effects among municipalities.

These models will test whether the presence of contiguous municipalities  $j$  that experienced a fertility change at time  $t-1$  has an effect on the probability, for a municipality  $i$ , of experiencing the same change at time  $t$ . These models will also attempt to estimate the barrier effect of the Belgian linguistic border.

### **101. The Diffusion of new fertility behaviours in Algeria: geographical changes observed between 1987, 1998 and 2008 censuses**

*Zahia Ouadah-Bedidi, University Paris Diderot (URMIS) /Institut National d'Études Démographiques (INED); Jacques Vallin, Institut National d'Études Démographiques (INED); Amar Ouali, Ministry of Health*

Within three decades Algerian fertility dramatically fell, from 8 children per woman in the early 1970s to 2.2 in the late 1990s, before climbing up after 2000. As usual, the decline started in cities. But it could not have been so rapid at the national level without diffusing in rural world quickly. We check here such assumption by analysing data available at regional and local levels. Local data are rare and hardly accessible, except those from the 1998 census now published at the “commune” level. A special treatment of 1987 census data for the central part of the country allowed us to analyse changes occurred in the last period of sharp decline at the commune level. It is also very interesting to look at the geographical changes in age at marriage, the rise of which was the first mean of fertility reduction, and to discuss the relation between the two behaviour changes.

### **101. The onset of out-of-wedlock births in Switzerland: A spatial diffusion analysis**

*Jean-Marie Le Goff, University of Lausanne*

The aim of the communication is to analyse the onset of extra-marital births in each district of Switzerland between 1970 and 2000. The starting time of the spread of extra-marital birth differed according to regions. It has, for example, first increased in the French speaking area of Switzerland and in urbanized areas. We suspect a spatial diffusion process. Data we use is the level of out-of-wedlock births for each district of Switzerland at four moments, 1970, 1980, 1990 and 2000. We define the time of the onset of out-of-wedlock births for each district following a method suggested by Bocquet-Appel and Jakobi (1998). We then estimated an event history model of this time in which we introduce as a characteristic a social distance between districts which already experiment an increase of extra-marital births and those which did not. This social distance is considered as a proxy of the nearness between districts. Provisory results show a significant effect of this distance on the hazard rate. Lesser is the distance and higher is the probability of the onset. This result confirms our hypothesis of a diffusion process on the Swiss territory.

### **110. Changes in Healthy Life Expectancy and the Correlates of Self-rated Health in Bangladesh between 1996 and 2002**

*Md. Ismail Tareque, Tokyo Medical and Dental University, Japan; Yasuhiko Saito, Nihon University; Kazuo Kawahara, Tokyo Medical and Dental University*

This study attempts to answer several questions: has self-rated health (SRH) improved in Bangladesh; are life expectancy (LE) and healthy life expectancy (HLE) increasing in the same direction, and how much are the relative increases; and how can HLE be improved? We used data from the World Values Survey (WVS). The results show that perceived health improved between 1996 and 2002. For males, statistically significant increases in the expected number of years lived in good SRH were found, though life expectancy showed a decrease of about 3 to 6 months. Comparatively, males expected fewer life years spent in good health but a much larger proportion of expected life in good health than females. This was true only in 2002, however. Different states of health were also found to be associated with socio-demographic differences. Finally and most strikingly, in multivariate analyses, life satisfaction was the only factor found to have a significant

positive and growing impact on SRH for males and females in both years, although in both years the impact was much more pronounced for females than for males. This demonstrates that individuals with life satisfaction are more likely to have good SRH. Therefore, greater emphasis should be placed on life satisfaction when efforts are made to improve SRH and HLE in Bangladesh.

### **110. Gender Differences in Perceived Health Expectancy for Chinese Elderly**

*Xiaochun Qiao, Institute of Population Research, Peking University*

The purpose of this paper is to compare the changes of perceived health expectancies of Chinese elderly from 1987 to 2010, and explore the gender differences in the change of health status. Based on nationally representative data, we calculated the perceived health expectancies of the Chinese elderly for both males and females, and made a comparison with the results of the perceived health expectancies of the elderly among 1987, 1992, 2000 and 2010. We found that the morbidity of the elderly was expanded from 1992 to 2000 and compressed from 1987 to 1992 and from 2000 to 2010, and found that the expansion in morbidity for females was more serious than that for males, even though the increase of life expectancy for females was much quicker than that of males. The changes of health status of the elderly, especially for females, were abnormal from 1992 to 2000. The change in social institutions should take some responsibility for the worsening of health for the elderly at that time.

### **110. Life tables by race: a comparison among methods**

*Estela Maria Cunha, State University of Campinas (UNICAMP); Jeronimo Oliveira Muniz, Universidade Federal de Minas Gerais (UFMG); Alberto Jakob, University of Campinas (Unicamp); José Marcos Pinto Da Cunha, Universidade Estadual de Campinas (UNICAMP)*

Levels and patterns of mortality by age, sex and race/color are among the most important indicators of health. Research shows that blacks and whites differ widely in their profiles of morbidity and mortality, but little is known about the sensitivity of interracial differences in mortality to different methods of estimation. This paper presents, compares and evaluates life tables by sex and race/color for all of Brazil, constructed on the basis of indirect demographic methods of estimation based on information regarding surviving children and mothers' mortality (variants of the Brass indirect method). The data was taken from the Brazilian demographic censuses and nationally representative household surveys (PNADS). Information was also obtained by using direct methods, which combine statistics on reported deaths and intercensal growth rates. We discuss the advantages and disadvantages of each method and present confidence intervals for estimates of mortality by sex, age and race/color. Finally, we discuss the impact that racial reclassification may have on recent estimates.

### **110. Sex differences in life expectancy at birth in two Caucasus countries: the role of the alcohol-related mortality?**

*Karine Kuyumjyan, National Statistical Service of the Republic of Armenia; Irina Badurashvili, Georgian Centre of Population Research; Géraldine Duthé, Institut National d'Études Démographiques (INED); Jacques Vallin, Institut National d'Études Démographiques (INED)*

In the framework of the unfavourable mortality trends observed in the former Soviet republics, Caucasian countries experience specific evolution. In this region, civil registration of vital events remains not complete. We re-estimated mortality levels and trends in Armenia and Georgia since the early 1980s, confirming specific mortality patterns, but similar in both countries. However, gender differences are greater in Georgia than in Armenia. The aim of this paper is to explore the reasons for these differences: looking at all ages, but more specifically at adult mortality for which data are more reliable and where we suspect a major role of alcohol-related mortality that is higher in Georgia than in Armenia.

### **111. Childlessness: perceptions, acceptability and the gender dimension**

*Latifat Dasola Gbonjubola Ibisomi, University of the Witwatersrand; Netsayi Mudege, African Population and Health Research Center (APHRC)*

Childlessness has major psychological and social implications for affected persons especially in settings where fertility is highly valued. In such setting, childlessness is a potentially stigmatizing status and voluntary childlessness is rare. Given the various socio-economic and demographic changes that have taken place in recent decades in virtually all societies, there is the need to explore how these developments may have affected societal perception of childlessness especially in societies that celebrate parenthood. Using narratives of individuals from three Nigerian communities, this paper examined societal perception and acceptance of voluntary and involuntary childlessness. The paper relies on data collected from 24 focus group discussion with men and women in Nigeria. Findings show that voluntary childlessness is not a legitimate choice in Nigeria. Infact, staying with an infertile spouse was seen as choosing to be voluntarily childless. However, we noted a more tolerant attitude to involuntary childlessness. The policy and programme implications of the findings are discussed.

### **111. Reproductive History and Mortality of Fertile and Subfertile Men**

*Katharina Anna Belting, Philipps Universität Marburg; Ronny Westerman, University of Marburg; Andrea Werdecker, University of Marburg; Ulrich Otto Mueller, Philipps University Marburg*

In one of the first studies ever on the subject we have reported a higher lifetime mortality rate for subfertile and sterile men without co-morbidity over all age groups in comparison to fertile men. The objective of this retrospective cohort study is to explore the association between male fertility and life time mortality. Little is known from literature reviews and own research about eventual biological mechanisms behind these mortality differentials. Here we go on reporting on a survey of surviving subjects and proxies on life time morbidity and reproductive biography details which may give additional information. Databases are general and semen parameters of 1408 patients attending the andrological service at Marburg University Hospital in 1949 and later and data from a core interview with 973 survivors and a proxy interview with 435 surviving family members. Results may indicate a protective effect of cohabiting with children (own/foster/adopted/step) for subfertile men.

### **111. Support Networks of Childless Older People in Europe**

*Martina Brandt, MPISOC; Christian Deindl, University of Cologne*

Western societies age rapidly. Today, people do not only live longer, they also have less children. These developments exert considerable pressure on pension and health systems. Children are the most important source of support in old age, especially when there is no partner. Older parents also transfer significant amounts of money to them. In times of rising childlessness we thus face new challenges: On which support networks do childless older people rely? (How) can the lack of children be compensated? Who provides help and care? Who profits from financial resources of the elderly?

We assess the support networks the childless aged 50 and over in 14 European countries based on SHARE focusing the importance of the extended family as well as public services. Our analyses show that financial transfers are diminished considerably and private help is often taken over by the extended family and neighbours. Intense care tasks, however, are mostly provided by public providers. The family and especially intergenerational relations play an important role for support in old age. When there are no children, vital support for older persons has to be taken over by public providers in many cases. In countries with low service provision, childless older people thus experience a lack of help, especially when depending on vital care.

### **111. Voluntary, Involuntary and Temporary Childlessness in the United States**

*Dudley L. Poston, Texas A&M University; Cristina Elizabeth Cruz, Texas A&M University*

In this paper we first examine overall trends since 1910 in levels of childlessness among ever-married White, Black and Hispanic women for the years to 1995, and then among all women for the more recent years. We next use data from the 2006-08 National Survey of Family Growth (NSFG) to separate the women into three categories of childlessness and a “chilled” category. In our analysis of the 3,689 White women, 1,766 or 47.9% were “chilled,” 1,130 or 30.6% were “temporarily childless,” 629 or 17.1% were “voluntarily childless,” and only 164 or 4.4% were involuntarily childless. Then we estimated a multinomial logistic regression equation for the White women to predict childlessness. We found that education is both positively and significantly associated with being voluntarily, involuntarily, and temporarily childless, relative to having children. The dummy variable indicating whether the woman is never married is positive and significant for all three categories of childless women; age has no statistically significant effect on being voluntarily or involuntarily childless, but is negatively and significantly associated with being temporarily childless. If our paper is accepted for presentation at the IUSSP meetings, we will also conduct similar analyses of Black women and Hispanic women.

### **112. A Life Course Perspective on Geographical Distance to Siblings, Parents and Grandparents in Sweden**

*Martin Kolk, Stockholm University*

The kinship network of an individual changes over her life course. This study makes a contribution to kinship research, demography and cultural geography by studying how migration and demographic patterns shape the geographical availability of kin in contemporary Sweden. This study examines how distance to siblings, parents and grandparents change over a person’s life course using longitudinal administrative register data. The study follows the complete 1970 cohort (N=75 000) and all their kin and studies how individuals distance to their kin change from age 10 (1980) to age 37 (2007) by means of data on residence for siblings, parents and grandparents. The study reveals surprising continuity in geographical distance to parents after age 25. Distance to living maternal and paternal grandparents see very minor changes after the index cohort reaches their early 20s. Theories of increasing geographical dispersal of the kinship network as individual ages are not supported.

### **112. How do Family Territories inform us about Family Relationships?**

*Eva Lelievre, Institut National d’Études Démographiques (INED); Christophe Imbert, INED/Migrinter*

The challenge for contemporary research on the family which, in demography and sociology, is often dominated by quantitative survey results is to devise research tools allowing to describe family life beyond the household so that the spatial dynamics of kinship relations can be captured (Widmer and Jallinoja, 2008 ; Bonvalet and Lelièvre, 2012). In that respect the latest round of the French Family survey, a nationally representative survey (367,000 individuals aged 18 and over) associated to the 2011 census provides information on the places of residence of all family members outside the household (parents and children of the respondents). Taking advantage of this large-scale survey, our objective is to give an innovative overview of both the spatial configuration of families and the functioning of family spaces. We will address the diversity of family structures and detail the variation of family composition and spatial concentration/dispersion according to the relevant characteristics of both the families (size and age of the respondent) and the locations (proximity, urban/rural). We will then, following on previous work done (Lelièvre and Imbert, 2003 ; Lelièvre and Robette, 2010) describe the family networks and establish a typology of these ‘family spaces’.

### **112. Socioeconomic background and children's shared residence in Sweden**

*Alma Wennemo Lanninger, Stockholm University; Jani Turunen, Stockholm University*

This paper analyses socioeconomic differentials in children's likelihood of having shared residence, meaning living equal or near equal time with both parents after parental union dissolution. This is an aspect of modern family complexity that has so far largely been overlooked. The cross-sectional analysis is based on the Swedish Level of Living Study and Surveys of Living Conditions from 2000-2003. The tentative results show an increased likelihood of shared residence for children of women in non-manual occupations compared to children of manual working women after controlling for income and education. There were no occupational differences in the likelihood of shared residence for children living with a male respondent. The results show no educational differences after controlling for occupational category and other characteristics. We see a geographical pattern with shared residence being more common in the Stockholm metropolitan area compared to other major cities and rest of the country.

### **112. The Family Context of cohabitation and single motherhood in Latin America**

*Albert Esteve Palos, Centre d'Estudis Demogràfics; Joan García-Román, Centre d'Estudis Demogràfics; Ron Lesthaeghe, Royal Academy, Brussels*

The dramatic shift from marriage to cohabitation during the last four decades in most Latin American countries begs the question as to the living arrangements of cohabiting couples and single mothers. The new "Family Interrelationship Variables" in the IPUMS samples of Latin American censuses facilitated the construction of an enlarged LIPRO typology. LIPRO classifies individuals with respect to the type of household in which they are living. The results indicate that cohabiting women and single mothers of ages 25 to 29 are frequently found in parental households or in other extended or composite households. However there are large variations according to country and education. For instance, cohabitation is mainly in nuclear households, as in Europe, in Puerto Rico, Costa Rica, Brazil, and Argentina. It is mainly in extended households in Peru, Colombia, Bolivia, Ecuador, Panama, Venezuela and Cuba. Mexico and Chile occupy intermediate positions. In all instances coresidence of cohabiting couples with other kin drops significantly upon the transition to parenthood, and then there are no differences between cohabiting and married couples anymore. Single mothers, however, continue to coreside in extended or composite households, and this holds particularly for the better educated among them.

### **113. Consequences of intermarriage on descendants' labour market entry**

*Dominique Meurs, University of Paris West; Ariane Pailhe, Institut National d'Études Démographiques (INED)*

The risk of unemployment in France is higher for second-generation North African immigrants than it is for second generations from other ethnic origins. The extent to which employer prejudice is responsible for this poor labor market outcome is subject to debate. We propose to test the role of intermarriage on descendants' labour market entry. We compare the risk of unemployment of natives and three second-generation sub-groups: people born to two immigrant parents, those born to an immigrant father and a native mother and those born to a native father and an immigrant mother. Using the French employment surveys 2006-2008, we estimate the probability to be unemployed, controlling for human capital variables, region and parents' social characteristics. Our results indicate that second-generation North Africans born to mixed parents have a higher risk of unemployment if they have an immigrant father than if they have an immigrant mother. This difference in the unemployment rate according to which parent has immigrated is not observed in the case of second-generation South Europeans. We conclude that statistical discrimination probably plays a role in the high rate of unemployment of second-generation North Africans on the French labor market.

**113. The Redistribution and Socioeconomic Mobility of Immigrants in America's Interior**  
*Erica Jade Mullen, Brown University*

This paper addresses two gaps in the migration literature: (1) the need for longitudinal microdata to study the impact of migration and (2) the absence of studies that analyze whether immigrants in "new destinations" in the U.S. are doing better or worse socioeconomically in those places. The 1996 and 2001 panels of the Survey of Income and Program Participation are used here to track the before- and after-migration incomes of natives and immigrants in the U.S. using descriptive and multivariate regression techniques, taking selection and endogeneity into account. The goal is to assess whether immigrants who migrated between "traditional" and "new" metropolitan areas during the late 1990s and early 2000s are better or worse off economically compared to (1) before they migrated, (2) non-migrant immigrants in traditional metropolitan areas, and (3) native migrants. Destination types are categorized by traditional versus new destination state and also by size of metropolitan area. This research is necessary for understanding how immigrants in different parts of the U.S. are incorporating socioeconomically.

**113. Immigrant Earnings Assimilation in France: Evidence from a Pseudo-Cohort Approach**  
*Aziz Belhassaini, Institut National d'Études Démographiques (INED)*

We provide the first attempt in France to evaluate the Immigrant Assimilation Hypothesis. This latter predicts the convergence of immigrants' wages since arrival towards those of natives. Coupling the only two national specific surveys on immigrants, our pseudo-panel methodology nets out the cohort and period effects. Three country-specific profiles stand out: (1) for Sub-Saharan and North African immigrants, the recent highly-educated arrival cohorts record higher earnings convergence rate but witnessed at entry higher earnings disadvantage and worse labor market conditions compared to their less-educated earlier cohorts, thus making the occurrence of the earnings crossover with natives unlikely; (2) conversely, the Turkish and South-East Asian group improves its relative earnings position across successive cohorts of arrival via a reduction in the entry earnings gap, shortening considerably the duration before the catch-up earnings; (3) the group of Portugal is by far the less skilled group but the most successful: all successive cohorts manage to reach earnings parity more and more precociously and, better still, overtake native earnings. The negative relationship emerging between economic successfulness and skill level suggests, with the immigrants low return to education, the existence of an education-to-job mismatch.

**113. L'impact de l'immigration au Québec sur l'effet "The Pig in the Python" du baby-boom**  
*Jacques Légaré, Université de Montréal; Yves Carrière, Université de Montréal; Yann Decarie, Institut National de la Recherche Scientifique; Jean-François Picard, Université de Montréal*

On observe deux grandes phases de l'évolution démographique de l'après-guerre au Québec. La première étant le baby-boom qui concerne les générations très nombreuses nées entre 1946 et 1966 et qui fut plus important au Québec que dans la majorité des autres pays touchés par ce phénomène. La seconde étant le baby-bust, qui lui, concerne les générations nées après 1966. L'écho du baby-boom fut relativement peu important par la dimension des cohortes de naissances concernées, et nettement insuffisant pour rétablir un certain équilibre dans la dimension des cohortes de naissances, d'où l'analogie avec « The Pig and The Python ». Cependant, une politique d'ouverture sur l'immigration internationale a fait en sorte que la disproportion entre les effectifs des baby-boomers et celles des baby-busters s'atténue graduellement au cours du cycle de vie. L'objectif de la présente communication est de montrer: L'écart important entre les effectifs dans leur jeunesse; Un écart de moins en moins important aux âges adultes du à l'immigration nette; une quasi-disparition de l'écart dans les âges de la retraite du à cette immigration cumulative.

#### **114. Exclusionary Urbanization and Changing Migration Patterns in India: Is commuting by workers a feasible alternative?**

*Ajay Sharma, Iqdr*

In this paper, we study the impact of changing trend of internal migration away from cities along with the exclusionary and unwelcoming nature of cities on the mobility of workers. We show that in the light of these changing trends, where cities are becoming unaffordable (because of costly housing facilities and higher cost of living), and individuals opt to commute to urban areas for work to optimize their income along with affordable housing and basic amenities in the rural and peri-urban areas on the outskirts of the cities. Using the latest nationally representative survey on employment and unemployment 2009-10, we show that higher urbanization, labor market factors (job availability, wages etc.) along with the location of jobs (agglomeration of industries and services) affects the decision of a worker to become a commuter. We find that higher urban and peri-urban population in a region causes higher commuting of workers from rural to urban areas due to better connectivity and more job opportunities in these areas as compared to their rural counterparts. The spatial clusters of manufacturing jobs in rural as well as urban areas lead to higher commuting, both ways- urban to rural, rural to urban. On the other hand, service sector jobs concentrated in urban areas attract workers to commute from rural to urban areas.

#### **114. Brazilian migration patterns between 1980 and 2010: toward a transitory period?**

*Ana Carolina da Cruz Lima, Universidade Federal de Minas Gerais (UFMG); Rodrigo F Simões, Universidade Federal de Minas Gerais; Ana Maria Hermeto Camilo Oliveira, Universidade Federal de Minas Gerais (UFMG)*

The reciprocal relationship between development and population dynamics affects the migration patterns. The level of regional development is affected by the migration process, and the subsequent migration flows are affected by the growth rates of the localities in a process of circular and cumulative causation. The aim of this paper is to identify the main characteristics of the Brazilian migration patterns' between the 1980's and the 2010's. To achieve this goal, we analyze data from demographic census for the period, provided by IBGE. The migration criterion adopted considers migrant the individual who lives in a region for less than 05 years, regardless of his place of birth. Data analysis shows that migration patterns in Brazil are extremely related with the levels of regional development. Moreover, migration flows are associated with the advantages of urban centers, especially if they are located in medium sized cities. New trends begin to emerge and are related to the economic expansion of new destiny regions, with the decline of job opportunities in the most developed region of the country, and with return migration. Despite the changes observed, the inertial component of Brazilian dominant migration patterns decreases the expansion rate of its migration transition.

#### **114. Internal Migration in Germany between reunification and financial crisis: Changes in spatial patterns and sex ratios**

*Nikola Sander, Vienna Institute of demography*

Existing analyses of net migration flows point to mass migration from the East to the West as the key driver of population decline across East Germany. But available migration statistics suffer from incompatibility over time, largely due to frequent county boundary changes since reunification in 1990. This research aims to gain a better understanding of contemporary internal migration patterns and how they drive population decline and gender imbalances in the East. I draw on the new German Internal Migration (GIM) database (Sander, 2013) to quantify the impact of East-West migration on Eastern States and their capital cities. The GIM database holds annual migration counts drawn from the population register for 397 regions with temporally consistent boundaries. The results show that in 1995-2004, East-West migration had a stronger impact on population decline in many eastern counties than movements within the East. But this pattern has

changed. In 2010, less than half of all net losses from East German counties were to other counties in the East. Gender imbalances toward men in rural Eastern Germany are typically attributed to more young women than men moving from the East to the West. My results suggest, however, that gender imbalances arise primarily driven by movements of young females toward Berlin, Leipzig and Dresden.

#### **114. Real Adaption or Not: New Generation Internal Migrant Workers Social Adaption in China**

*Huanjun Zhang, Renmin University of China*

The new generation of migrant workers, who is currently in the key stage of adapting to the immigrant area, has become a social group that cannot be ignored in China's cities. This paper aims at finding out the social adaption situation of the new generation of migrant workers in China's urbanization progress. The data is from New Generation of Migrant Workers Research (2011) conducted in January 2011. The research studies 1201 migrant workers from 24 provinces or cities in China by questionnaire and in-depth interview. To establish the social adaption level, the author set the index of social adaption with the new generation migrant workers. The index system includes three classes, which is about 5 points: assimilation ability, identity recognition, social acceptance, fairness of adaption, and home-leaving. According to the research, Chinese new generation migrant workers have reached 51% overall. In the aspect of self-evaluation, with the situation of leaving-hometown and the fairness of adaption is higher, while the assimilation ability and identity cognition level is lower, self-cognition element of social acceptance is medium. Select personal characteristics, family characteristics, as well as social capital & human capital as the three different variables to explore the influences according to Logistic Regression.

#### **115. Do subjective health measures predict cognitive and physical health among older adults globally?**

*Daniela Weber, International Institute for Applied Systems Analysis (IIASA); Vegard Skirbekk, International Institute for Applied Systems Analysis (IIASA)*

The aim of this study is to identify the relation between mental and physical subjective and physical health measures across countries. Self-reported health measures are commonly used in ageing surveys, although its problems with respect to the accuracy of self-reported measures are known. These may be explained by cross-cultural differences in response styles. Recent ageing surveys are used to compare objective and subjective health (both mental and physical) for more than 20 countries all over the world. Here, samples of those aged 50 and above were asked about self-reported physical and mental health. Each respondent had to assess ones general health and ones perceived memory function. Additionally, each interviewee was visited by health personnel, who measured grip strength, lung function and blood pressure as well as BMI and the waist-hip-ratio. Finally, cognitive performance tests, including memory tests, were conducted.

#### **115. Demographic differences in the association between social networks and self-rated health in later life**

*Heather Booth, Australian National University; Pilar Rioseco, Australian National University*

We examine the social network (SN) – self-rated health (SRH) association for groups defined by age, sex and partnership, using survey data for older Australians. Models predict fair/poor SRH vs good/very good/excellent. Explanatory variables cover 3 network dimensions (social engagement (SE)/instrumental support (IS)/emotional support (ES)), distinguishing between family-, friend- and group-based networks. Sociodemographics, disability, mental health and subjective e(x) are included. SE is not associated with SRH except in the presence of an interaction between disability and SE. Only for unpartnered is more SE(family) associated with better SRH, and this is tempered by a reversed effect at higher levels of disability. This reversed effect also occurs more widely. For

the oldest group, more SE(friends) is associated with worse SRH, although this is reduced at higher levels of disability. We find a 'beneficial' effect of group activity for most groups. IS(family) is associated with better SRH for males and those aged 60-69 but with poorer SRH for those aged 50-59. ES(friends) is associated with better SRH for males only. IS(friends) and ES(family) are not associated with SRH. These varying associations among demographic groups has implications for strategies and policies to support health and wellbeing in later life.

### **115. Health Status, Functional Disability and Quality of Life: An Assessment of Wellbeing of India's Older Population**

*Joemet Jose, International Institute for Population Sciences (IIPS); T.V. Sekher, International Institute for Population Sciences (IIPS)*

To successfully address the challenges of rapid population ageing, it is essential to have an understanding of health status and quality of life. In this study, we examine the self-rated health, functional disability and quality of life of older people in India. The study uses the data from the World Health Organization sponsored "Study on Global Ageing and Adult Health (SAGE-INDIA)" of 2007. This pioneering survey gathered information from 6560 persons (aged 50 years and over) from six Indian states. Analysis indicates that higher years of education and better economic status of the households are positively related with better health condition, lower disability, and higher quality of life. Social security measures, including pensions and health insurance are crucial to ensure quality of life and well-being of older population in India.

### **115. Self-Rated Health, Mortality, and Disability among the Elderly in Matlab Bangladesh**

*Nobuko Mizoguchi, University of Colorado Boulder*

While the relationship between self-rated health and mortality is well established in industrialized country settings, there is little evidence from developing countries. This study seeks to further our understanding of the relationship between 1) self-rated health and 2) mortality and functional disability in a developing country, through the use of a unique longitudinal dataset from Matlab, Bangladesh. Using panel data from two rounds of the Matlab Health and Socioeconomic Survey and the Matlab Health and Demographic Surveillance System, the study examines two outcomes, mortality and functional disability, using survival and multilevel logistic regression analyses. To the extent that people are aware of their health condition regardless of whether they have access to health care, this study is expected to find that self-rated health is a good predictor of subsequent mortality and morbidity. However, the high prevalence of infectious diseases and injuries may mean that previous self-rated health status have little relations to subsequent mortality. The results from this study will provide new insights to a scarcely explored topic on the relationship between self-rated health, mortality, and functional disability in a low-income setting.

### **116. Who Gets Health Insurance Coverage in India? : New Findings from Nation-wide Surveys.**

*Shijith Vathukkal Parambath, International Institute for Population Sciences (IIPS); T.V. Sekher, International Institute for Population Sciences (IIPS)*

How far the coverage of health insurance available to Indians, both in rural and urban areas? Who can afford to pay for health insurance coverage? This study examines health insurance scenario of India by analyzing the trends and patterns and household characteristics of health insurance policy holders. The study utilized available data from the latest rounds of two nationally representative surveys DLHS (2007-08) and NFHS (2005-06). Only 5 percent of the households in India were covered under any kind of health insurance. Within the insurance schemes, the state owned health schemes are the most subscribed (39.2), followed by the Employee State Insurance Scheme (17 percent). Among the households belonging to the lowest economic categories, less than 3 percent were covered by any health scheme or health insurance. However, the recent trends show that the

community health insurance targeting poor households are becoming much popular and it may be the most appropriate way of supporting the families vulnerable to catastrophic health spending.

#### **116. Determinants of Health Insurance Ownership among Women in Kenya: Evidence from the 2008-09 Kenya Demographic and Health Survey.**

*James K Kimani, Population Council; Remare Ettarh, African Population and Health Research Center*

Background: The government of Kenya is making plans to implement a social health insurance program by transforming the National Hospital Insurance Fund (NHIF) into a universal health coverage program. This paper examines the determinants associated with health insurance ownership among Kenyan women. Methods: Data came from the 2008-09 Kenya Demographic and Health Survey, a nationally representative survey. The sample comprised 8,435 women aged 15-49 years. Descriptive statistics and multivariate logistic regression analysis were used to describe the characteristics of the sample and to identify factors associated with health insurance ownership. Results: Being employed in the formal sector, being married, having secondary education and higher, belonging to the middle and rich wealth status categories and residing in a female-headed household were associated with having health insurance. However, divorced, separated or widowed women were significantly less likely to have health insurance (OR= 0.4;  $p < 0.05$ ) compared to their counterparts who were never married. Conclusion: As the Kenyan government transforms the NHIF into a universal health program, it is important to implement a program that will increase equity and access to health care services among women of different socio-demographic backgrounds.

#### **116. Effects of spatial and material affluence on health insurance subscription among women in Ghana**

*Akwasi Kumi-Kyereme, University of Cape Coast; Joshua Amo-Adjei, University of Cape Coast*

This study compares ownership of health insurance among Ghanaian women with respect to material affluence and spatial location. The paper draws on the 2008 Ghana Demographic and Health Survey. Bivariate descriptive analysis and binary logistic regression estimation technique were used. In the bivariate descriptive, it is observed that the proportion of women not registered decreases with increase in material affluence. Spatially, the proportion of respondents not registered during the data collection was highest (70%) in the Coastal areas followed by Savannah and Forest belts. However, inferential analysis at the bivariate stage showed that the likelihood of registration was significant among respondents from the Savannah areas. Interacting material affluence with wealth, we notice that the gaps between the poorest and the non-poor in the Savannah widens significantly but the differences between the poor and least poor in the Forest zone are virtually non-existent. Our findings underscore the point that targeting the poor to improve equity in social health insurance such as the one operating in Ghana requires particular attention to proxy means (material affluence) and spatial targeting since choosing one over the other can obscure and result in ineffective policy prescriptions.

#### **116. The Impact of Universal Coverage on Health Consumption and Preventive Activities: The case of Thailand**

*simone ghislandi, Bocconi University; Wanwiphang Manatchthong, Thammasat University; Viviana Maria Eugenia Perego, Bocconi University*

The objective of this paper is to investigate whether the UC scheme in Thailand was associated to significant changes in the health consumptions and preventive activities of the general population. In order to isolate the impact of the UC reform on the variables of interest and to rule out other effects from long-run relation, we focus our analysis on the period just before and the period just after the introduction of the UC. The data are drawn from the 2001 and 2003 rounds of the Health

and Welfare Survey (HWS). A differences in differences approach with Kernel matching was used, defining people working in the informal sector as the treatment group. Results show that: 1) preventive activities increased, 2) Inpatient care use increased, 2) outpatient care use was unaffected by the UC, 4) there was a switch from traditional to formal medicine. Furthermore, we find a significant reduction in out-of-pocket expenditure. Results show no clear sign of Moral Hazard and opportunistic behavior and confirm that the Thai UC as a successful story.

### **117. Accuracy and reliability of data collected using census questions**

*Tom Moultrie, University of Cape Town; Rob E Dorrington, University of Cape Town*

This paper reports on the results of a study conducted in the Agincourt Health and Demographic Surveillance Site in 2009. A special round, of fieldwork, using fieldworkers who had not been involved in fieldwork of the DSS, was implemented in which census-type questions were asked of respondents (and via them, of other household members). The study had three principal goals: First, to evaluate and measure the errors in responses to those census-type questions when benchmarked against the longitudinally-collected portraits collected over approximately 15 years, differentially by respondents and respondents reporting on other household members. A second intention of the study was to compare the results from a variety of indirect estimation techniques with the directly-observed estimates reconstructed from the DSS data. Doing so would provide insight into how well the techniques work. The final goal of the project was to find ways of improving those techniques that did not reliably capture the underlying demographic trend so that they might be improved upon.

The current paper will report on the findings related to the first, and (probably) the second, goals outlined above.

### **117. Effects of Interviewer-Respondent Familiarity on Contraceptive Use and Abortion Data**

*Guy Stecklov, Hebrew University; Alexander Weinreb, University of Texas at Austin; Mariano Sana, Vanderbilt University*

Problems with reproductive health data in non-Western settings are widely noted and have been the focus of innovative methodological work. Collection of improved data on contraceptive use and abortion generally involves methods for distancing the interviewer from the respondent through forms of self-administered questionnaires (ACASI, etc.). We discuss an alternative approach which breaks from the "stranger interviewer norm." We present data from a unique experimental design recently fielded in the Dominican Republic levels of familiarity linking interviewers and respondents are randomly varied and test how this variation alters responses. Initial evidence suggests that contraceptive use estimates obtained by more traditional, stranger interviewers in our sample resemble estimates obtained by the DHS. Estimates obtained by local interviewers however are far lower. Our findings suggest that levels of familiarity strongly affect how contraceptive use data are reported by respondents. Further analysis is focused on indirect methods to validate the widely varying reports.

### **117. Improving the quality of adult mortality data collected in demographic surveys: a randomized trial in Niakhar (Senegal)**

*Stephane HELLERINGER, Columbia University; Gilles Pison, Institut National d'Études Démographiques (INED); Bruno Masquelier, Université Catholique de Louvain; Valérie Delaunay, Institut de Recherche pour le Développement (IRD); Géraldine Duthé, Institut National d'Études Démographiques (INED); Almamy Malick Kante, Institut National d'Études Démographiques (INED); Laetitia Douillot, Institut de Recherche pour le Développement (IRD)*

In sub-Saharan and south Asian countries with incomplete vital registration, adult mortality rates are estimated by asking respondents of household-based surveys (e.g., DHS) about the survival of their maternal siblings. These siblings' survival histories (SSH) are inexpensive to collect but are

affected by biases, including sample selection and recall biases. Statistical adjustments have been proposed to correct for sample selection biases, but respondent errors (e.g., forgetting of siblings) are considered inevitable. We test whether a new survey instrument - the siblings enhanced life calendar (SELC) – improves the quality of mortality data relative to standard instruments currently used in DHS surveys. The SELC is based on a life history calendar, a tool widely used in other areas of survey research (e.g., migration histories, sexual behavior research) but not to improve the recall of adult mortality data in developing countries. It also incorporates recall cues developed through cognitive interviews. We report results of a randomized trial of the SELC conducted in a rural population of Senegal (Niakhar) that has been under demographic surveillance (DSS) for the past 50 years. To compare error rates in each arm of the trial, we link DSS data (our “gold standard”) to SSH and SELC data at the individual level.

### **117. Qualité des données dans le cas d'enquêtes sur les maladies rares**

*Gil Bellis, Institut National d'Études Démographiques (INED); Alain Parant, Institut National d'Études Démographiques (INED); Marie-Hélène Cazes, Institut National d'Études Démographiques (INED)*

Les maladies rares (moins de 50 sujets atteints pour 100 000 dans une population) sont responsables d'une morbidité importante et d'invalidités chroniques mais ont la particularité d'être mal connues. La variabilité des formes cliniques et des âges d'apparition des symptômes sont des situations qui peuvent conduire à un recensement incomplet des malades et à une mesure biaisée du calendrier de la mortalité. Sur l'exemple de l'une de ces maladies, la mucoviscidose, dont le contexte de la prise en charge médicale a évolué en France au cours de ces dix dernières années à la faveur de l'instauration d'un dépistage néonatal systématique, nous comparons la qualité des données produites par deux procédures d'enquête. L'une repose sur une information mono-source (centres de soins seulement), l'autre sur une information multi-sources (centres de soins, déclaration des nouveau-nés dépistés, déclaration des malades transplantés) pour l'identification des cas. Par rapport au dispositif mono-source, le dispositif multi-sources permet de disposer d'une estimation plus réaliste de l'espérance de vie à la naissance et de quotients quinquennaux de mortalité plus robustes ; par ailleurs, la structure par âge de la population enquêtée retrouve un profil plus équilibré, avec une nette amélioration de l'inclusion des patients les plus jeunes.

### **118. État civil et environnement familial de l'enfant : Qui déclare-t-on ? Une étude de cas au Mali**

*Véronique Hertrich, Institut National d'Études Démographiques (INED); Catherine Rollet, Université de Versailles; Amandine Stephan, INED*

Reconnue comme un droit fondamental de l'enfant, l'enregistrement à l'état civil reste peu fréquent en Afrique subsaharienne. L'Unicef estime qu'un tiers des naissances y sont déclarées dans les années 2000. Dans de telles conditions quels sont les enfants qui sont déclarés et ceux qui ne le sont pas ? Comment évolue la pratique quand les déclarations deviennent plus fréquentes : de façon homogène ? en touchant plus particulièrement certaines catégories de population ? certaines catégories d'enfants ? Que nous disent les pratiques de déclarations sur les relations parents/enfants ? Reproduisent-elles des différences sexuées que l'on retrouve dans d'autres comportements, par exemple la scolarisation ? La communication portera sur la déclaration des naissances dans une zone rurale du Mali, objet d'un suivi de population de 25 ans (projet Slam de l'Ined, 7 villages, 4300 hab.), en tirant parti de la question sur la disponibilité d'un acte de naissance dans le recensement de 2009.

### **118. Parental resource allocation and spillovers of milk fortification program in Mexico – a population based assessment**

*Ana Mylena Aguilar Rivera, The World Bank; Yarlini Balarajan, United Nations Children's Fund (UNICEF); Seemoon Choi, Harvard School of Public Health; Annie Chu, World Health Organization-Western Pacific Regional Office*

In Mexico, an estimated 50% of preschool children and 25% of school age children are anemic. Anemia is associated with a number of adverse health and economic consequences. The Mexican government implemented a social assistance program called Liconsa to enhance the nutritional status of low-income families by providing subsidized and fortified whole milk, especially to children under 12 years. While the efficiency and long term effectiveness of the program has been evaluated elsewhere, the study of spillovers from fortified Liconsa milk on outcomes of other household members has not been explored. In 2006, 74.8% beneficiaries of Liconsa were children and adolescents. However, evidence of spillovers to other household members is strong: 18.8% of adults aged 20-29 years, 21.8% of 30-39 years and 40-49% of 20-29 years reported drinking liconsa milk the previous week. The main aim of the paper is to assess the potential externalities of this intervention on anemia (and labor market outcomes) for other household members and explore the consequences for the estimation of the effect of the project on the beneficiaries. To examine these assumptions, we analyzed individual level data from Mexico's Encuesta Nacional de Salud y Nutrición in 2006 and assess the impact on three different groups using a fixed-effect model.

### **118. Prenatal nutritional program and child health at birth: empirical evaluation of the impact of the OLO program in Canada.**

*Catherine Meredith Haeck, Université Du Québec à Montréal; Pierre Lefebvre, UQAM*

This paper evaluates the impact of a prenatal nutritional program on child health at birth in one of the Canadian provinces, Québec. The objective of the OLO ("oeuf-lait-orange") program is to reduce the incidence of prematurity and low birth weight by providing nutritional supplements to pregnant women in situations of poverty. We exploit the historical and geospatial progressive implementation of the program throughout the province between 1985 and 2005 to identify the causal impact of the program on infant health. Our preliminary results suggest a positive effect of the OLO program on birth weight. Since birth weight is associated with a number of adulthood outcomes such as educational attainment, the evaluation of this program contributes to the debates on which policies should be implemented in order to reduce socioeconomic inequalities.

### **119. Impact of Mothering on Demographic Behaviors in Japanese Society: Labor Shortage and the Preference for Parent-Child Co-Sleeping**

*Yoshie Moriki, International Christian University*

Mothering in Japanese society is very important. Mothers are expected to raise and educate children in a society valuing harmony and regularities. They tend to see themselves more as mothers than individuals once they have a child, which is said to contribute to lower labor force participation rates. This paper examines the meaning and significance of mothering in Japan and explores how mothering is internalized. In particular, it focuses on the practice of parent-child co-sleeping, which is common in the child-centered Japanese family. The practice is so instilled that it is unquestioned and, hence, has rarely received academic attention. However, in light of current demographic conditions that promote higher female labor force participation, this sleeping arrangement should be critically examined. Data for this paper were collected via focus group discussions involving 36 participants (both males and females) living in Tokyo. Findings show that participants value mothering because it is how they were raised. The high mothering standard is, in part, deterring women not only from continuing to work, but also ironically, from deciding to become a mother or have multiple children.

### **119. Liminal Lives in Rural Anatolia: Patriarchal Veils Dragging Infants to Death**

*Yaprak Civelek, Istanbul Arel University*

This paper focuses on my field experiences from Turkey Demographic and Health Surveys, Turkey Maternal Mortality Survey, and extensive use of qualitative research on family planning and induced abortion in Turkey since 1993. During the surveys, I had the opportunity to gather substantial amounts of information about women's everyday experiences in relation to traditional practices, approaches to health and health care, and women's attitudes and emotional contexts. The narratives of women included heartbreaking and tragic experiences due to traditional gender norms within the families. In this paper, I examine the effect of patriarchal/gender hierarchies on the experiences of the brides in relation to infant mortality data through a qualitative approach based on observations, field notes, and in depth interviews with women. The research questions the impact of the culturally determined gender and age hierarchies within these extended families on the liminal life of infants and their mothers in Anatolia. How do these relationships determine the life courses of the infants during their initial years? The concepts of 'liminality' and development of 'personhood' frame the theoretical grounds to further articulate bride/mother/infant visibility and invisibility within these families and the experiences of infant mortality.

### **119. Single parenthood in a life course perspective**

*Laura Bernardi, University of Lausanne; Nasser Tafferant, UNIL / LIVES; Cornelia Hummel, University of Geneva*

Identifying what « single parent household » are becomes a challenging task in an era of new family forms and related legislations regulating the care and responsibilities of children. Official statistics hardly reflect a composite reality of households between which children circulate and where parental relationships with biological and non-biological parents change during the life course. On the basis of an explorative qualitative study in Switzerland, we focus on the blurry borders of single parent households and on the life course pattern of individuals living as solo parents. We analyze the life course of individuals whose entry to the single parent state fits one of these two patterns: a) becoming single parent as the consequence of a couple project which got interrupted (separation, divorce, or widowhood); b) single parent in the absence of a couple project (contraceptive failure, partner non acceptance of parenthood, single parenthood as a life choice). We propose a multidimensional definition of single parents that takes into account both the objective life trajectories of parents and children and subjective dimension of individuals categorized as single parents. We highlight the importance of a longitudinal perspective on single parent households to understand their dynamics and to develop better-adapted policies to

### **119. 'The Doctor's Way': Traditional Contraception and Modernity in Cambodia**

*Eleanor Hukin, London School of Economics And Political Science*

In Cambodia modern contraceptives are cheaply available and morally acceptable, yet unmet need remains high. Furthermore, some wealthy, educated, urbanites are choosing to shun modern methods in favour of traditional contraceptives. This paper explains this seemingly counter-intuitive behaviour. The research design takes a mixed methods approach, initially using data from the Cambodian DHS 2005 to assess trends in contraceptive use and logistic regression to analyse traditional method use. The likelihood of using traditional, rather than modern, methods, increased as education and wealth increased. Taking these findings and the questions they raise as a departure point, 21 months of ethnographic fieldwork was conducted in Cambodia. Periodic abstinence, labelled 'traditional' by demographers, is known locally as 'the doctor's way'; regarded as suitable only for 'knowledgeable people' who use the foreign calendar. Furthermore it conforms to dominant Khmer ideals of femininity. Behaviour that appeared counter-intuitive - wealthy educated women choosing traditional over modern methods - is explained when viewed

within the specific context and system of meaning. The research contributes to anthropological demography by bringing approaches and methods from medical anthropology to the typically demographic issue of contraceptive use.

### **120. Demand for Long-acting and Permanent Contraceptive Methods among Kurdish Women in Mahabad, Iran**

*Hatam Hosseini, Bu-Ali Sina University; Fatemeh Torabi, University of Tehran; Balal Bagi, Bu-Ali Sina University*

The aim of this paper is to study the demand for long-acting and permanent contraceptive methods (LAPCMs), and its determinants among Kurdish women in Mahabad city, Iran. Data are taken from Mahabad Fertility Survey (MFS) conducted on a sample of over 700 households in April 2012. The results show that the demand for LAPCMs was 71.3 percent at the time of survey, although only 27.7 percent of women used these methods. Thus, the number of unintended pregnancies is likely to increase in the future if this gap does not reduce. The multivariate analysis shows significant impacts on the dependent variable of the number of children ever born, the perceived contraceptive costs, and childbearing intentions. Moreover, women at the end of reproductive ages and those with higher education are more likely to desire LAPCMs. The paper concludes that despite a growing use of contraceptive methods in recent decades, the need to develop reproductive health services, and promote the quality of family planning services remains an inevitable necessity.

### **120. Determinants of Intra Uterine Device usage among Women in Reproductive Age in three states of North India**

*Tariq Mohd, Population Services International (PSI); Ajay Singh, Population Council, India; Nayanjeet Chaudhury, Population Services International, India*

This paper examines the impact of Population Services International (PSI) led intervention on IUD use among married women. The study was conducted on randomly selected 6560 women from three northern states of India. The analyses suggest that around 43% of currently married women in the age group of 15-49 years were currently using at least one method for family planning. The IUD use among women was 5.4% in the selected states. A careful exploration of data suggests that IUD use was more among women with more than 30 years of age. It was also seen that 73% of the women who had two or more children of either sex, reported more use of IUD. Women who belonged to high Standard of Living (SLI) reported more use of IUD than others. Women who were exposed to intervention also reported more use of IUD. For example, 10.3 % of the women who were exposed to Inter Personal Communicators (IPC) activities reported using IUD compared to only 5.2% of those not exposed to IPC activities. The multivariate analysis also suggests that the perceived availability of IUD and exposure to any IPC activity had significantly higher odds of using IUD among women.

### **120. Factors Influencing Long Acting Reversible Contraceptive Use in Malawi**

*Violet Nyambo, University of the Witwatersrand, Johannesburg; Latifat Dasola Gbonjubola Ibisomi, University of the Witwatersrand; Clifford Obby Odimegwu, University of the Witwatersrand*

Unintended pregnancy is a major problem among sexually active women in Sub Saharan Africa and occurs due to a number of reasons, such as inconsistent use of short term contraceptive methods or non-use of modern contraception. Recent scientific findings indicate that long acting reversible contraceptive (LARC) methods, which are cost effective and highly effective in pregnancy prevention, are a possible solution to the problem of unintended pregnancy. To promote use of these methods and ultimately reduce unintended pregnancy, it is important to identify factors that are associated with the use of long acting reversible contraceptives methods. Data

used in the study were derived from the 2010 Malawi Demographic and Health Survey and binary logistic regression modelling was used to identify demographic, socio-economic and reproductive health factors associated with long acting reversible contraceptive method use among sexually active women aged 15-49 years in Malawi. There is regional variation in the use of long acting reversible methods. Other factors associated with LARC use include age, place of residence, fertility intentions, marital status, education and number of living children. The implications of the findings are discussed.

### **120. How acceptable are injectable contraceptives? Experiences of users and health care providers in India**

*Francis Xavier Arockiavictorial John, Population Council; Shireen J. Jejeebhoy, Population Council*

This paper examines women's experiences of using injectable contraception (IC) from the perspectives of women and health care providers, and sheds light on the feasibility and acceptability of making IC widely available in India. The study was undertaken in 27 selected facilities of 4 NGOs in 5 states. Using a retrospective study design, 375 married women were interviewed who had initiated IC use in 12-21 months before the interview. In-depth interviews were conducted among 16 health care providers. Findings, based on lifetable analysis, indicate that just 23% of the women continued to use ICs at 12 months. Reasons for discontinuation centred on the side-effects experienced, largely menstrual disturbances. Counselling was not comprehensive for most women. Multivariate analysis suggests that women who had continued using ICs for at least 12 months tended to be younger, educated and multiparous. Notably, continuation rates were also higher among women who had experienced fewer side-effects and were provided good quality of care. In-depth interviews with health care providers corroborated many of these findings. Findings suggest that although continuation rates are low, a considerable proportion of women find IC an acceptable method. With appropriate counselling, it is possible to offer this method more widely in the RCH programme.

### **121. Couples' concordance on reproductive intentions as a predictor of contraceptive use: Findings from the baseline data of a longitudinal couple study in Nigeria**

*Ambrose Akinlo, Obafemi Awolowo University, Ile Ife; Peter Olasupo Ogunjuyigbe, Obafemi Awolowo University, Ile Ife; Ernest O Orji, Obafemi Awolowo University Ile-Ife; Adebajo Babalola Adeyemi, Obafemi Awolowo University; Abimbola Samuel Phillips, Obafemi Awolowo University Teaching Hospital*

While many researches have shown that contraceptive use tends to increase where there is spousal communication and concordance on reproductive intentions, many other studies, using couple data, have equally shown that most spouses do not accurately report the views/intentions of their partners. This study is based on the baseline data from a longitudinal couple study in a peri-urban community, Ipetumodu, in Osun State, Nigeria collected between April and May, 2010. The study shows that there is a noticeable level of discordance when the response of each wife is matched with her husband's on several issues. For instance, only 14% of couples concurred that they use contraception. The study shows that even in a patriarchal society like Nigeria, a woman's reproductive intention is a more important determinant of her contraceptive use than her husband's reproductive desire, and also that couples' agreement on reproductive intentions is an important predictor of women's use of contraception.

### **121. Enhancing Couples' Family Planning Decisions through Male Engagement**

*Shrabanti Sen, Fhi 360; Dominick Shattuck, Fhi 360; Deepika Yadav, FHI360; Elizabeth Doggett, Fhi 360; Randy M Stalter, Fhi 360; Helen Bristow, FHI360*

Engaging men in family planning (FP) has been found to improve programmatic outcomes and increase gender equality. Little is known about the influence of couple communication on FP decision-making in India. We describe an intervention that utilized existing best practices for this purpose in Jharkhand, India. 572 men received 6, 90 minute sessions every 11 days for approximately 2 months. Sessions topics addressed: 1) gender equity, 2) communication skills, and 3) family planning knowledge. Post-intervention data collection is presently underway (October, 2012). At baseline 23% of the couples were using contraception and male condoms method most reported. We will test the relationship between changes in participants' knowledge of FP, attitudes toward FP, GEM Scale scores, ease and frequency of communication and in increases in FP use. All statistically significant changes will be reported and complemented with qualitative data (focus group discussions & IDI) from participants and providers.

### **121. Perceived Partners' Desire for More Children and Modern Contraceptive Use among Married Women in Uganda**

*Allen Kabagenyi, Makerere University; Gideon Rutaremwa, Makerere University; Olivia Nankinga, Makerere University*

Utilizing the 2011 UDHS, we study the influence of perceived partner's desire for more children and its effect on current contraceptive use among married women in Uganda. Data herein is based on 5352 married and was weighted before analysis. Descriptive statistics of women's background characteristics were computed. Multinomial logistic regression models were run to establish the relationship between husbands' desire for more children with different socioeconomic variables. Overall the variables found to be highly significant with husband's desire for more children were; modern contraceptive use, wealth, religion, fertility intentions. Women who perceived their husbands to want more children and those who did not know their husbands desired number of children were less likely to use modern contraceptives. In addition, wealth, religion, respondents' education and husbands' education levels and are a key determinant for perceived husbands' desire for more children. Muslim respondents were less likely to know the number of children their husbands desired. we conclude that recurrent couple communication is pertinent in reduction of high fertility levels, promotion of small families and modern contraceptive usage.

### **121. Young Couples: How to Meet Their Contraceptive Needs to Space Births?**

*Isha Bhatnagar, Population Council; M. Ejazuddin Khan, Population Council; Avishek Hazra, Population Council*

Background: Bihar is the second most populous state (106 million) in India and has highest total fertility rate (3.9) and a stagnated contraceptive prevalence rate of modern methods (29 percent). The unmet need for contraception is high. Data and Objectives: Based on a large sample survey (N=7995), including 2937 women, 723 husbands and 592 health workers, and 150 in-depth interviews of women and their husbands, the present paper attempts to understand (a) who decides and how decision of contraceptive use is taken, (b) how socio-cultural norms influence contraceptive use dynamics, (c) barriers to contraceptive use and (d) where family planning program is failing to reach young couples. Results: A combination of qualitative and quantitative approach including multivariate analysis shows a combination of socio-cultural and a weak FP program contribute to continued low use of contraception including: (a) large family size norm and son preference, (b) subordinate status of young women, low mobility outside home and lack of decision making power, (c) early marriage/pregnancy with no knowledge of fertility return leading to unwanted pregnancies; compounded by (c) programmatic inadequacies such as failure to

provide correct and complete knowledge on FP, fear of side effects, and limited access to methods within village.

### **122. Development of an Internationally Comparable Disability Measure for Censuses: Challenges and Opportunities**

*Mitchell Loeb, National Center for Health Statistics; Jennifer Madans, National Center for Health Statistics*

Disability is conceptualized as arising from the interaction of a person's functional status with their physical, cultural, and policy environments. If the environment one lives in is designed for the full range of human functioning and incorporates appropriate accommodations and support mechanisms, then people with functional limitations would be able to fully participate in society. The equalization of opportunities is among the major targets of the UN Convention on the Rights of Person's with Disabilities – and was selected as the purpose for developing the set of questions described here. The International Classification of Functioning, Disability and Health (ICF) developed by the World Health Organization has played a pivotal role in realizing this conceptualisation of disability. This approach to disability has required the development of new measurement tools for use in both censuses and surveys. Earlier impairment-based approaches to disability measurement focused on medical conditions and asked some variation of the question: Do you have a disability? The current focus of measurement expresses the social model of disability and has shifted to eliciting experienced difficulties in functioning in a set of basic action domains.

### **122. Estimating death differentials to measure the labeling impact of disability: A case study of past populations in Sweden**

*Helena Haage, Umeå University; Lotta Vikström, Umeå University*

This study follows about 500 disabled individuals over life to examine their survival chances in past society and in comparison to a control cohort of non-disabled people. The aim is to detect whether those with disabilities were markedly stigmatized and thus faced difficulties in life, which we in accordance with the labeling theme of secondary deviance assume would be indicated by high levels of mortality. We make use of Sweden's 19th-century parish registers (digitized by the Demographic Data Base, Umeå University) to identify people who the ministers defined as disabled and to construct the control cohort. Then we employ bi-variate analyses and run multivariate regression models. The statistical results suggest that disability significantly jeopardized the survival of individuals but was not the only key to their mortality, because gender determined the survival of disabled, too. Disability limited men's life expectancy more evidently than the women's. Our findings are rare in providing statistical evidence of disabled individuals' experiences beyond institutional life and because we seek to measure the level of labeling in their life. The death differentials demonstrate that the disabled constituted a disadvantaged but heterogeneous collection of people whose demography and pathways must be further researched.

### **122. Functional capacity among Brazilian elderly an analysis using polytomous IRT**

*Kaizo Iwakami Beltrao, EBAPE/FGV; Moema De Poli Teixeira, ENCE/IBGE; Maria Isabel Parahyba, DPE/IBGE; Philip R. Fletcher, Pearson*

Life expectancy among the elderly has been increasing for decades and it has drawn attention to the health conditions of those added years. Functional Capacity (FC) has been used as a basic indicator to appraise health conditions and elderly well-being. To conceptually characterize FC, there is a standardized framework such as The International Classification of Functioning, Disability and Health (ICF). The diversity of proposals to operationalize the concept covers from the way the question is constructed to the scales used to evaluate FC, making it difficult comparison among studies. An indicator for FC is constructed using Item Response Theory (IRT).

Data is the health supplement of the Brazilian National Household Survey (PNAD) in 1998, 2003 and 2008. Since the seven questions under scrutiny presented several level answers, a Generalized Partial Credit Model for ordered polytomous data is adjusted. Answers included four levels of difficulty. A GLM model was then fitted to the indicator using socio-economic explanatory variables. This paper shows that it is possible to construct a FC scale using IRT. Comparison between two populations is possible if at least a common question exists for the two surveys. One can classify tasks according to some power of discrimination between levels of FC.

### **122. Trends of Disability Under Different Measurement Schemes in the Chinese Elderly Population, 2002 to 2008**

*Qiushi Feng, National University of Singapore; Yi Zeng, Duke University And Peking University*

ADL and IADL indexes, both of which are self-reported limitations on the daily activities, are limited to differentiate the contextual barriers and intrinsic impairment for of disability status in the elderly population. This study examines four types of disability measurements in the Chinese elderly disability trend analysis: 1) the self-reported difficulty in IADL, 2) the self-reported dependency in ADL, 3) the self-evaluated function performance, and 4) the objective performance in function tests. The data are from three waves of the Chinese Longitudinal Healthy Longevity Survey (CLHLS) in 2002, 2005 and 2008. The results showed contrasting trends under four different measurement schemes. The fact that the trends based on objective performance is reversed in comparison with trends of ADL and IADL suggests that it is likely that the ADL and IADL improvement could be largely due to the changes in the living environment of the elderly instead of the improvement of their body functions. To better understand the source of disability in the elderly population is extremely important for medical interventions, elderly care and public policy development and we call for more attentions to such a measurement problems in the disability trend studies.

### **123. Demography and Housing Price Dynamic in China**

*Yongheng Deng, National University of Singapore*

China has been experiencing a rapid growth of housing price in recent years. This paper attributes this phenomenon to the demand side, i.e. marriage demand of the baby boomers born in 1980s. We propose an equilibrium model of housing market to show housing price is highly depended upon the exogenous demographic change. Furthermore, the housing price responses slowly to exogenous shock, such as shocks of interest rate, down payment ratio, when the number of young households is large in the model. The housing demand arising from demographic change is inelasticity.

China government has implemented cooling measures in some major cities recently, so as to moderate the increase in housing prices. It provides us an opportunity to test the contribution of demography on housing price and avoid the endogeneity problem. We examine the impacts of cooling measures on housing price among 42 Chinese major cities, and find that the consequences of cooling measures are highly depended upon the demographic variables in the city. The effects of cooling measures are weak in the cities whose marriage rate, weight of younger households, sex ratio and weight of immigrant households are high.

### **123. Differentiated Housing Demand by Birth Cohort**

*Chang-Moo Lee, Hanyang University*

Most models of aggregate housing demand assume that households follow over time demand estimated with a single cross-sectional observation. However, housing demand depends not only on the current social and economic contexts characterized by age but also on the past socio-economic experiences and physical properties differently formed by birth cohort. This study proposes a methodology to estimate aggregate housing demand reflecting the inter-generational

differences of housing consumption which vary according to birth cohorts. By using the Korean Labor and Income Panel Study (KLIPS) and Korean Census data we derive the inter-generational differences of housing demand through conceptual restructuring of longitudinal variations in housing consumption according to birth cohorts of household members and utilize them to estimate the housing demand. The result shows that the post baby-boom generations including the baby boomers reduce their housing consumption compared to the older generation and that the aggregate housing demand will be relatively lower than the amount estimated by existing models.

### **123. Housing demand and housing prices in Japan and the US.**

*Chihiro Shimizu, Reitaku University*

Japan and the United States have experienced the housing bubbles and subsequent collapses of the bubbles in succession. The house price in Japan continued to decline for 20 years after the collapse of bubbles. The one of reasons for this, housing demand based on population had dropped at the same period. We focused on the relationship between the demand for houses and house prices based the panel data in Japan and US. Shimizu and Watanabe (2010) indicated that there is no significant relationship between the demand for houses and house prices in both Japan and the US. In this sense, it is hard to explain whether there is a bubble and the size of the bubble according to prefecture (state) using demand elements. This suggests that it is possible that the concept of demographics having an impact on the demand for houses, which thus caused the house prices to increase, is not effective in explaining the price fluctuations in neither Japan nor the US. Is it correct or reasonable result? The purpose of this paper develop several housing population-based demand factors and focus on the relationship between these demand factors and housing prices on Japan and the US.

### **124. Child Self-Rated Health: The effect of longitudinal measures of neighborhood racial composition**

*Elisabeth Dowling Root, University of Colorado at Boulder; Jamie L Humphrey, University of Colorado at Boulder*

The literature on neighborhood context and health suggests that the life-course processes involved in building trajectories of health are not adequately captured in cross-sectional analysis, which has been the empirical focus of much of the research in this area. In this study we use data from the U.S. Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K) to examine the impact of longitudinal measures of neighborhood racial composition on child self-rated health between kindergarten and 8th grade. We employ two-level multilevel longitudinal logistic regression models to examine variation in the initial status and trajectories of child self-rated health over time. Since the ECLS-K tracked child mobility over time, we are able to model the impact of changes in neighborhood racial composition. We find that children who lived in neighborhoods with higher rates of minority residents had lower initial good health (OR=0.63;  $p<.001$ ). Likewise, children who subsequently moved into a neighborhood with high rates of minority residents had the odds of self-rated good health reduced by 0.63. Including the cross-level interactions reduced the effect of living in a minority neighborhood (OR=0.69;  $p=.063$ ). However, Hispanic children living in high minority neighborhoods had reduced the odds of initial good health by 0.63 ( $p=.051$ ).

### **124. Neighborhood differentials in child mortality within urban settings of Kenya, Nigeria, Senegal and Uttar Pradesh, India**

*Livia Montana, University of North Carolina at Chapel Hill; Lisa Calhoun, University of North Carolina at Chapel Hill*

More than half of the world's population resides in urban areas. In developing countries, the vast majority of future population growth will be in cities. In order to address the health needs of this

growing population, timely data on within-city differentials in morbidity and mortality is necessary. Mortality rates within cities are typically not available in standard data sources such as the DHS, and thus intra-urban differentials in child mortality are unknown. Using baseline data from the MLE project in urban sites of Kenya, Nigeria, Senegal and Uttar Pradesh, India, we estimate infant, child and under-five mortality rates for slum and non-slum populations in major cities. The representative household samples of the urban populations in 5-6 major cities in each country were drawn to represent slum and non-slum populations, or the urban poor in cities where slum designations were not available (Nigeria and Senegal). These age-specific mortality rates show that mortality is generally higher among the slum populations compared to the non-slum urban populations in all four countries. We then explore the individual, household, community and geographic factors which contribute to higher rates of child mortality among urban slum dwellers as compared to non-slum dwellers.

**124. Neighbourhood inequality as a health risk: empirical evidence from Swedish registers**  
*Soren Edvinsson, Centre for Population Studies, Umea University; Erling Haggström Lundevaller, Department of Statistics, Umeå University; Gunnar Malmberg, Umeå University; Nawi Ng, Department of Public Health and Clinical Medicine, Umeå University*

In this paper, we explore the impact on mortality of income inequality in residential neighbourhoods and municipalities among elderly 65-84 years in the year 2006, using a Swedish longitudinal micro-data covering the entire Swedish population for the period 1960 – 2006. Preliminary cross-sectional multi-level analyses have been carried out and we have found an association between income inequality and all-cause mortality in municipalities after controlling for mean income level and personal income. These analyses are now complemented by longitudinal analyses of long-term residential histories with exposure to equal/unequal municipalities and neighbourhoods and the long-term impact on mortality. We investigate the association between mortality and income inequality at place of residence at different time lags and the effect of a summary measure of previous exposures to environments characterised by different inequality levels. We also compare groups that have different experiences of residential characteristics, i.e. those that have resided in unequal or equal places and those that have changed from equal to unequal residences or vice versa. Preliminary results from a cross-sectional analysis on 2006, show that income inequality in the municipality of residence had an independent effect on mortality in the age group 65-84 years

**124. Why Do Children Die More Often in Informal Neighborhoods? The Case of Ouagadougou**

*Bassiah Abdramane Soura, Université de Ouagadougou; Clémentine Rossier, Institut National d'Études Démographiques (INED); Stéphanie Dos Santos, Institut de Recherche pour le Développement (IRD); Aude Nikiema, Institut National des Sciences Sociales, Ouagadougou ; Yempabou Bruno Lankoande, Institut Supérieur des Sciences de la Population (ISSP); Roch Modeste Millogo, Institut Supérieur des Sciences de la Population, Université de Ouagadougou*

Ouagadougou, the capital of Burkina Faso, is currently experiencing rapid population growth. Since 2008, the Ouagadougou Health and Demographic Surveillance System follows 80,000 people living in five neighborhoods on the periphery of the city, half of them living in poor, informal settlements. In this analysis, we study the social disparities characterizing the risk of dying before age five in these areas as well as the social differentials of associated risk factors. We find that children who are born to uneducated and poor parents are twice as likely to die as their counterparts, likely because they have worse access to both preventive and curative health care. Young children living in informal areas are also twice as likely to die compared to others because, everything else being equal, they are more often ill, more often malnourished, and less likely to receive medical care; these outcomes seem all related to the unsanitary environment.

### **125. Age peculiarities and dynamics of female population mortality in Russia**

*Elena Zemlyanova, Federal Research Institute for Health Organization and Informatics; Alla Ivanova, Federal Research Institute for Health Organization and Informatics*

Though high male mortality is considered to be a marker of negative demographic processes in Russia, situation with female mortality occurs to be less favourable. The aim is to manifest the sources of unstable female mortality dynamics, age groups and death causes slowing down life expectancy growth in females during 2002-2010. Mortality decreased by 15-23% depending upon age. In young and middle ages positive trends developed after 2005, in women over 50 - during the first part of decade. Mortality decline in all age groups was due to external causes. In young and middle ages general positive dynamics was intensified by reduction of deaths in circulatory and respiratory diseases. But mortality from infections and digestive diseases retards positive processes. Considering essential share of marginal deaths in external causes (alcohol poisonings, homicides, drownings, falls etc.) it is possible to assume that their reduction reflects gradual negotiation of population marginalization, growth of living standards, decrease of poverty scale. But growth of mortality from infections and digestive diseases evidences that marginalization factor is not overcome. The form of its manifestation changes: in 1990s marginal population increased mortality risk from external causes, nowadays their mortality switches to somatic causes.

### **125. Differentials in Quality of Life across Eastern Europe: Evidence Based on Healthy Life Expectancy**

*Yuka Minagawa, Waseda University*

While studies examining differentials in mortality across Eastern European countries abound, few researchers to date have focused on the diversity in quality of life. Using data from the European Values Study (EVS), the present study investigates variations in quality of life, measured by healthy life expectancy (HLE) between ages 20 and 74 for 23 Eastern European countries in 2008. The analyses from the prevalence-based Sullivan method demonstrate substantial disparities in quality of life between East Central Europe and the former Soviet Union. In 2008, the difference in HLE amounted to 21.79 years for men (ranging from 35.57 years in Macedonia to 13.98 years in Russia) and 21.86 years for women (from 34.37 years in the Czech Republic to 12.51 years in Russia). These findings suggest that men and women in East Central Europe enjoy much healthier lives compared to those in the former Soviet Union. Fully understanding the diversity in population health status within Eastern European countries requires research that focuses not only on quantity of life but also on quality of life.

### **125. Patterns of regional mortality in Ukraine from Soviet time to nowadays**

*Svitlana Poniakina, Institut National d'Études Démographiques (INED)*

This paper compares regional cause-specific mortality profiles in the course of time from the last census in Soviet Union (1989) to nowadays (2011) taking for the reference point the year of the last and a single so far census in Ukraine, 2001. In the early 2000s, the geography of mortality varies from one cause to the other. Standardized death rates for the biggest killer, circulatory system diseases were higher in eastern and northern parts of the country, which is sometimes associated with Chernobyl disaster. Mortality from external causes was as well high on the east, center and north. South is distinctive by infectious mortality and digestive system problems. The results show that this interregional variation has increased between 1989 and 2001 in respect to most causes of death except cancers and respiratory system diseases. Since 2001, reversely, differences are reducing. Considering regional cause-of-death patterns highlights the fact that some regions of Ukraine are more advanced than others on the path of health transition, which is characterized by the prevailed type of nosological structure as well as spread of lifestyles, self-preserving behaviour and modern attitude toward health in a wide sense.

## **125. Spatial Variation and Determinants of Alcohol-related Mortality in Belarus and Lithuania: an Ecological Study**

*Pavel Grigoriev, Max Planck Institute for Demographic Research; Domantas Jasilionis, Max Planck Institute for Demographic Research / Institute for Demographic Research, Lithuanian Social Research Centre; Vladimir M. Shkolnikov, Max Planck Institute for Demographic Research; Jacques Vallin, Institut National d'Études Démographiques (INED)*

Numerous population- and individual-level studies have confirmed a strong relationship between excessive alcohol consumption and striking excess male mortality in the countries of the former USSR. Yet the complex interplay between macro- and micro-level factors underlying this relationship has remained underexplored. Our analysis refers to the most recent period, and focuses on the male population aged 20-64. Using the detailed cause-specific mortality at the district level we first explore a spatial distribution of alcohol-related mortality in the two neighboring countries, Belarus and Lithuania. Then, using the simultaneous autoregressive models we assess the strength of association between mortality and its potential determinants. As independent explanatory macro-level variables we consider a set of indicators available from the adjacent population censuses such as unemployment, education, marital status, and ethnicity. The preliminary results show that the districts located at the Belarus-Lithuania border show similar patterns and form large cross-border areas with elevated alcohol-related mortality. Although mortality variation is likely to be largely explained by differences in the contemporary socioeconomic conditions, the observed spatial patterns suggest the relevance of the common socio-cultural context.

## **126. Fertility intentions among people living with HIV and AIDS (PLWHA) are fraught with ambivalence: Mixed methods evidence from Nairobi slums.**

*Eliud Wekesa, Population Council; Ernestina Coast, London School of Economics and Political Science (LSE)*

Fertility intentions are strong predictors of eventual fertility, yet little is known about the fertility desires of HIV-infected persons in sub-Saharan Africa. Given the recent and rapid expansion of access to antiretroviral therapy (ART), understanding the fertility intentions, and consequent reproductive health services needs, of men and women living with HIV/AIDS is critical. Emerging evidence on the effect of HIV/AIDS/ART on fertility intentions is mixed with little or no explicit theoretical understanding. This study investigates fertility intentions of PLWHA using mixed methods population-based data collected 2010-11, comprising survey (n=513) and in-depth (n=41) qualitative interviews of PLWHA in Nairobi slums. We show that fertility intentions of PLWHA are fraught with ambivalence and ambiguity due to conflicts between social pressures for biological parenthood and moral pressures to avoid co-infection and future child orphanhood. The implications for reproductive health service provision are explored using in-depth interviews (n=14) with service providers.

## **126. Knowledge, barriers and attitudes towards prevention of mother-to-child transmission of HIV in Ghana**

*Simon Mariwah, University of Cape Coast, Ghana; Akwasi Kumi-Kyereme, University of Cape Coast; Augustine Tanle, University of Cape Coast; Kobina Esia-Donkoh, University Of Cape Coast*

While awareness of HIV and AIDS is almost universal in Ghana, the same cannot be said of prevention of mother-to-child transmission (PMTCT) of the disease. This paper assessed the level of knowledge, barriers and attitudes towards PMTCT of HIV/AIDS. Data were gathered through 22 Focus Group Discussions (FGDs) and 29 In-Depth Interviews (IDIs) with People Living with HIV and AIDS, pregnant women and their partners. Research participants were sampled from twelve cities/towns purposively selected from the three ecological zones in Ghana. The inclusion

criteria were border towns, commercial/mining towns/cities and towns/cities with high HIV/AIDS prevalence rates. It was found that people have high knowledge about MTCT but fair knowledge about PMTCT. For pregnant women, the most prominent deterring factor is the fear of being diagnosed HIV positive. Creating widespread community awareness of the full set of behaviours necessary to prevent MTCT is an essential step to improve participation in and adherence to interventions that are part of PMTCT programmes.

### **126. Measuring time to pregnancy in HIV+ women: Results from Demographic and Health Surveys**

*Alison Gemmill, University of California, Berkeley; Sarah E.K. Bradley, University of California Berkeley; Sheryl Vanderpoel, World Health Organization*

The exact mechanisms of HIV infection on biological fecundity are not fully understood, but epidemiological evidence provides support for the hypothesis that HIV+ women have lower pregnancy rates, take longer to become pregnant, and experience higher rates of fetal loss. However, these studies often fail to disentangle behavioral and biological responses to HIV acquisition on reproduction. The present study attempts to isolate the biological effects of HIV infection on fecundity by employing a time-to-pregnancy (TTP) study design. Using contraceptive calendar information from Demographic and Health Surveys, we use cox proportional hazard models to assess the relative TTP among HIV- and HIV+ women who desire children. If our analysis shows that HIV+ women who desire a child present with a longer TTP or are unable to become pregnant, then results can inform reproductive and maternal health program strategies for HIV+ women, which include ensuring future integration of fertility awareness education, providing fertility fitness, such as subfertility and infertility diagnostic and management services, and decreasing horizontal transmission of HIV.

### **126. Pregnancy and Abortion among HIV-positive women in Zambia and Nigeria: Comparing Attitudes of HIV-Positive Women and Health Care Providers**

*Olutosin A. Awolude, University of Ibadan/University College Hospital, Ibadan; Akinrinola Bankole, Guttmacher Institute; Ann Marie Moore, Guttmacher Institute; Isaac Adewole, University of Ibadan; Maximillian Bweupe, Ministry of Health; Gilda Sedgh, Guttmacher Institute*

In countries with generalized HIV epidemics, many women are attempting to achieve their fertility desires while avoiding or managing HIV/AIDS. Using Nigeria and Zambia as case studies, in 2009-2010, we interviewed HIV-positive women (Nigeria's n=207; Zambia's n=151) and health care providers (Nigeria's n=158; Zambia's n=107) about their attitudes towards childbearing and abortion among HIV-positive women. Attitudes towards childbearing by HIV-positive women show a high level of support among across all groups with providers being slightly more likely to support childbearing than HIV-positive women. Results suggest that both HIV-positive women and providers have more supportive attitudes towards childbearing by HIV-positive women in Nigeria than in Zambia. A similar analysis of the attitudes of HIV-positive women and their health care providers towards abortion among HIV-positive women shows that support for abortion by HIV-positive women is generally very low among both groups of respondents in both countries, with support being the highest among HIV-positive women in Nigeria and providers in Zambia. These results point to high levels of support for HIV-positive women to be able to have (more) children and continued stigma towards abortion, irrespective of the legal status of abortion and not conditional on ART availability.

### **127. Family development and the spouses' role behaviour in Iran**

*Fatemeh Torabi, University of Tehran; Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University*

The recent rise in age at marriage, reduction in fertility and increase in the life span of men and women in Iran make this country an interesting place to study different aspects of family development (i.e. children's birth, growth and departure from the parental home). Using the 2009 Time Use Survey, representing urban areas of Iran, this paper shows socio-economic differences in the timing of major family development stages and the spouses' role behaviour as they go through successive stages. The results show that (1) the timing of these stages and the associated role behaviour vary by level of education for both wives and husbands, (2) the role behaviour (particularly occupational, parental and domestic roles) greatly varies between wives and husbands and (3) both the timing and the role behaviour trivially vary by the family's economic status. These results not only contribute to the knowledge of family dynamics in Iran, but also help programme planning aimed at assisting people as they go through their life course. Future studies are needed to describe the spouses' role expectations at each family development stage to provide a better understanding about gender role structures within family.

### **127. Gender roles and parenting practices among married and cohabiting couples: evidence from the Italian Time Use Survey**

*Silvia Meggiolaro, Department of Statistical Sciences, University of Padova, Italy; Maria Letizia Tanturri, University of Padua*

The process of union formation and, consequently, the context of childrearing have deeply changed in Italy in the last decades. The increase in non-marital cohabitation has been accompanied by an impressive spread of out-of wedlock births. The possible consequences of these changes on gender role-set within couples are quite unknown in this country. In particular, there is no clear evidence whether (and how) Italian married and unmarried parents differ in childrearing practices. In this paper, we aim to verify whether a more egalitarian gender role-set is found among childless cohabiting couples in Italy and if persists for those who have a pre-school child, using a sample from the 2008/09 Time Use Survey. We expect that cohabiters are more egalitarian in sharing unpaid work and childcare, but we want to verify whether this is explained by the cohabitation in itself or rather by differences in individual and couple characteristics (such as labor market participation and education level). A special attention will be dedicated to fathers' role according to the kind of couple.

### **127. How Welfare States Affect Family Relationship? : A Comparative Study on Family Policies and Gendered Division in Care Time**

*Sun Mi Cho, Yonsei University*

Power-resource approach based on Esping-Andersen's views has been criticized, not considering women's different experience on family care work. The welfare state should be understood as 'a gendered power' which enhances or alleviates gender inequality, supporting different type of family provisions embedded in institutional frameworks. Family policies involve gendered conceptions who are primary care givers, affecting gendered division of care work in family relationship. Family policies can be divided into the following three types; Time-off, Cash, and Service as care provisions of family policy. Time-off involves a care conception of private duty, releasing economic needs. Cash indicates direct benefit transfer to private households increasing purchasing power. Service conceives care by public institutions to replace private care duty of families or women. I will examine how different institutional frameworks embedded in family policies conceive care relation and how these affect gender inequality in care work. Especially, I will focus on different care time within couples and relational dynamics held in household contexts. For empirical evidence, I will use multilevel/hierarchical model to analyze both country

and individual level. As data sets, I will use MTUS (Multinational Time Use Study) and OECD statistics.

### **128. Islamic religiosity of Turkish immigrants and their descendants in six European countries**

*Evelyn Ersanilli, University Of Oxford*

Most European countries have a significant share of immigrants who adhere to Islam. Whereas the majority of European countries have seen a trend towards secularization, studies have shown that the degree of religiosity among Muslim immigrants remains high, also in later generations. In this paper we analyse Islamic religiosity of immigrants from three different angles; host-country context, community effects, and individual-level factors. For host country context we investigate the effects the degree of accommodation of Islam and Islamic religious practice and the level of secularisation in the host country. For community effects we look at the influence of the size and origins of co-ethnic community in the region of residence. Finally, we look at the effect of individual level factors such as generation, education, labour-market participation and parental SES. Analyses are done with data on Turkish immigrants and their children in six European countries; France, Germany, the Netherlands, Belgium, Austria and Sweden. These countries have accommodated Islam to different degrees and also vary in their degrees of secularisation. Data come from the Six Country Immigrant Integration Comparative Survey (SCIICS). Four areas of religiosity are investigated: religious affiliation, identification, religious practice and attitudes

### **128. The Effect of Religious Affiliations and Religiosity on Marriage Timing : The Case of Muslims in United Kingdom**

*Muhammad Isa, University of Southampton*

The study tried to measure the effect of religious affiliations and religiosity on marriage timing of people in United Kingdom. Special Emphasis is being put on the Muslim people due to previous finding from 2001 census which found that Muslim people tend to marry earlier compared to other religious groups in United Kingdom. Since Majority of Muslims in United Kingdom is from South Asian descent, this issue is closely related to the issue of how immigrants in United Kingdom are adapting to the British culture. Understanding Society wave 1 data which contains sample boost on ethnic minorities was used in order to get more samples from Muslim people. Analysis of Survivor functions was used to measure the change in marriage timing over time while Cox proportional Hazard model was used to measure the effect of covariates on marriage timing. It is believed that the role of cultural and religious values are still very strong among Muslims in United Kingdom, which results in support toward practices and attitudes that facilitate early marriage for Muslim people in United Kingdom.

Keyword: Muslim, Marriage Timing, Immigrants, Cox Proportional Hazard Model, Religiosity

### **128. National Identity and Acceptance of Foreign Immigrants as Citizen among Koreans**

*Seokho Kim, Sungkyunkwan University; Eunsun Park, Sungkyunkwan University*

This study aims to examine the effect of national identity on the acceptance of foreign immigrants as citizens among Koreans. According to the existing literature, Koreans tend to hesitate to accept foreign immigrants as Korean citizens while accepting them as friends or co-workers. Although there has been a lot of interest in social distance among different ethnic groups, there are few studies examining why Koreans are so much committed to the meaning of being "citizen". This paper focuses on the role of national identity in explaining Koreans' hesitation to accept foreign immigrants as citizen. Since Korean hold strong national identity such as ethnic identity and national pride, they are less likely to accept other ethnic groups as the same member of nation. This paper argues that exclusive attitudes toward other ethnic groups can be understood if we examine the role of national identity. Analyzing the 2010 Korean General Social Survey, this

study examines the effect of national identity on acceptance of other ethnic groups as citizen. The results show that ethnic identity has the strongest impact on the acceptance of other ethnic groups as citizen.

### **128. 2nd generation non-nationals in Kuwait: Contradictions between host country policies and aspirations of migrants**

*Nasra M. Shah, Kuwait University*

The last three decades have seen a consistent rise in the relative percentage of non-nationals residing in the six Gulf Cooperation Council countries, including Kuwait. This increase has resulted from two main factors, the continued demand for skilled as well as unskilled workers, and an exacerbation of the stock of workers and their families residing in the Gulf for lengthening periods of time. Migration policies do not allow non-nationals to become Kuwaiti citizens, except in very rare circumstances. Yet, a sizeable percentage among non-nationals, 18 %, consist of 2nd generation residents, born and raised in the country.

A survey of the achievements, aspirations and plans of 2nd generation non-nationals was conducted by the author in May-December, 2012, focusing on high school students in 11th and 12th grades, and on working men and women. 1000 students and 250 working persons born in Kuwait and who lived at least half their life in the country were included.

This paper analyses the contradictions between government policies to reduce the percentage of non-nationals in the population and labor force and the aspirations and plans of the 2nd generation non-nationals to live and work in the country for the next several years.

### **129. Continuity and Change in Demographic Patterns of Indonesia's Urbanization, 2000-2010**

*Tommy Firman, Institute of Technology, Bandung*

This paper will identify the urbanization pattern in Indonesia by employing simple statistical methods to the readily available data of the 2000 and 2010 Indonesia Population Censuses, including percentage and rate of urban population growth. Urban localities (Desa Urban) are still largely concentrated on the island of Java, which may reflect the urban development disparity between Java and the outer islands, despite the fact that some outer island provinces have already experienced a high increase in the growth of urban localities and urban population. The peripheral of large cities experienced much more rapid annual population growth than the core of cities.

Although urban population is still greatly concentrated in Java, there have been significant increase in the proportion of urban population in some provinces outside over the period 2000-2010. Nonetheless, small and intermediate cities outside Java play a more important role as centers of socioeconomic activities compared to those in Java. In general, the recent pattern of Indonesia's urbanization reflects a continuity from the situation in 1990 and 2000, but at present some regions outside Java have begun to undergo rapid increase in the urbanization level and urban population growth.

### **129. Internal migration in Brazil: trends at the beginning of the 21st Century**

*José Marcos Pinto Da Cunha, Universidade Estadual de Campinas (UNICAMP); Rosana Baeninger, Nepo/Unicamp*

During the last 60 years, the internal migration in Brazil were strongly related to the processes of urbanization and spatial redistribution of the population, marked by the intense population mobility and inserted in different stages of economic, social and political processes experienced by the Country during this period. From 1970, we assisted de launching of the more recent changes in the national migration process. After a long period of economic crisis, more severe in the 1980s and somehow held in 1990, Brazil enters in the '2000s with new perspectives on their economic dynamics and for this reason it require a new look at its internal migration. In the field of

migration, it is true that a recovery in the economy, employment and poverty reduction should have effects on the volume and intensity of migration flows. The understanding of interregional migration in the last four decades incorporates the processes of in-migration, emigration and return migration marked by its specific historical features of “migratory complementary”. The return migration, although not a new phenomenon in national migratory history, was configured as a key element for understanding the long distance flow, especially those of Southeast to Northeast.

### **129. Spain's urban area growth phases: spatial patterns and causal analysis**

*Fernando Gil-Alonso, Universitat de Barcelona; Jordi Bayona, Universitat de Barcelona; Miguel Rubiales Pérez, Universitat de Barcelona; Isabel Pujadas Rubies, Universitat de Barcelona; Antonio Lopez Gay, Centre d'Estudis Demografics*

From a geographical perspective, these last decades, Spanish urban areas have constantly expanded. This urban sprawl has broken the traditional compact city model. However, from a demographic point of view, the picture is not as simple as Spanish urban areas have been through a series of growth and stagnation periods with significant spatial differences. This paper firstly intends to describe how the population of Spanish urban areas has increased this last forty years (1970-2011) and then to build, through cluster analysis, a spatial typology grouping urban areas which have similar growth trends. Finally, it analyzes, through factor analysis, the socio-economic causes behind the spatial patterns. 64 urban areas are incorporated to the study. In each of the cases, core city and periphery growth levels have been separately analyzed to enable the construction of an urban growth typology. Descriptive results show that two phenomena, suburbanization and foreign immigration, are the main drivers of a clearly defined spatial pattern in which highly-growing eastern urban areas would be clearly opposed to lower growing western ones. Preliminary analytical results demonstrate that this east-west divide would be mainly caused by the deep differences in the economic/labor market structures of the respective urban areas.

### **129. The Impact of Children and Parents on Different Gender's Migration Status – A Longitudinal Study of Migrant Households in Sichuan and Anhui in China**

*Chen Chen, University of California, Los Angeles*

By using a longitudinal study of 300 households in Sichuan and Anhui, this paper aims to combine the discussions of initiation of migration, returned migrants, and circular migration together. By building multi-level regression models, I use event history analysis to show how children and parents impact migrants' migration decisions overtime. When other factors are controlled, children's age and parents' health impact men and women's migration status in different ways: when the increase of children's ages generally increases the probability of starting migration for men, the change of the children's ages only impacts women's out-migration when all children reach the age of six – the age when children start primary school. Women tend to return to the villages when the children are 16 years old and still in school – the time when the children are preparing for senior high school entrance exam. When children of the household start going to college, both men and women's migration probability significantly increases. When the parents report bad health issues, the women are very likely to return to villages, while men's migration status usually do not change. The results show how migration works as a household strategy in China, and gender still decides the division of labor within a household.

### **130. A Socioeconomic Index to Measure Health Inequalities in the Elderly Population: San Juan, Puerto Rico and Havana, Cuba**

*Esther María León Díaz, Population and Development Studies Center (CEPDE), Cuba; Ana-Luisa Davila, Graduate School of Public Health; Alberto García Gurucharri, Universidad de San Juan, Puerto Rico; María Larriuz, Universidad de San Juan, Puerto Rico*

The proportion of adults reaching 60 in Latin America is expected to grow quickly. Cuba and Puerto Rico are good examples. San Juan and Havana have a substantial fraction of people above age 60. The objective of this paper is to study inequalities in health in two cities: San Juan, Puerto Rico and Havana, Cuba. This research is based on data from PREHCO (Puerto Rican Elderly Health Conditions) and SABE (Health, Well-being and Aging in Latin America). A socioeconomic index was calculated for Puerto Rico based on six dimensions: assets, household equipment, household ownership, per capita income, financial debts and health insurance; the index for Cuba was based on five dimensions per capita income, household infrastructure, household equipment, education and neighborhood environment. Using k-medians clustering the elderly population was grouped in three clusters: low, medium and high. Important differences by sex, age and certain health conditions were found between older adults in San Juan and Havana.

### **130. Age versus socioeconomic gradients on health of Indian adults**

*Perianayagam Arokiasamy, International Institute for Population Sciences; Uttamacharya Uttamacharya, International Institute for Population Sciences*

In the literature on determinants of health, studies have documented a positive socioeconomic gradient versus negative age gradient on health on adults. However, the dynamic and non-static nature of this linkage is largely underexplored amidst population in health transition. In this paper, we use nationally representative data from the Study of Global Ageing and Adult Health, India (SAGE 2007) to assess the patterns of age vis-à-vis socioeconomic gradients on health for Indian adults. In a first time exploration, we use a range of both reported and measured markers of adult health to study the consistency of the age effects on health across key socioeconomic indicators. Results uncover the dynamic patterns of age vis-à-vis socioeconomic gradients on health of Indian adults. Negative age gradient prevailed on key indicators of health across socioeconomic spectrum. However, age gradient was stronger for the poor and less educated adults. Concurrently, key measures of socioeconomic status: years of schooling and wealth quintile indicated an overbearing positive gradient on health but with considerable heterogeneity across ages and different health domains.

### **130. Intergenerational Correlations of Health Among Older Adults: Empirical Evidence from Indonesia**

*John Strauss, University of South California; Younoh Kim, University of Southern California; Firman Witoelar, SurveyMETER and The World Bank; Bondan Supraptilah Sikoki, Survey Meter*

It is widely believed that family background has a significant influence on children's life. The vast majority of the existent literature has focused on the relationship between parents' education and income and the education and income of their children. Surprisingly, much less work has been done on the intergenerational transmission of health. The main objective of this paper is to examine the correlations of health across generations using the Indonesia Family Life Survey (IFLS). We take advantage of the richness of IFLS and examine several health measures of respondents, including self-reports and biomarkers. As measures of health of both parents, IFLS has information on whether they are dead at the time of the last wave in 2007, their general health status and whether they have difficulties with any ADLs at the time of the survey or just before death. The findings suggest strong intergenerational correlations between the measures of parental health, schooling, and the health of their adult children. We also examine how these intergenerational correlations might differ for respondents born in the more developed parts of Indonesia compared to the less developed areas. Interestingly, these health associations are much lower for respondents who were born in Java or Bali.

### **130. Socioeconomic Status and Health among Older Adults in Vietnam, 2001-2011**

*Bussarawan Puk Teerawichitchainan, Singapore Management University*

The study examines how health outcomes at older ages are associated with socioeconomic status (SES) in rural and urban Vietnam and how such patterns of health inequality have changed over the last 10 years (2001-2011). Vietnam has witnessed rapid economic development, a significant increase in income inequality, and major health-sector reforms. These factors may have implications for older adults' health. Research related to the wellbeing of older adults is becoming more important as Vietnam begins a period of rapid population aging. The share of Vietnam's population age 60 and older is estimated to grow from 8% in 2010 to 31% in 2050 and by then, the number of Vietnamese older adults will increase by 335%. Analyzing nationally representative data from the 2011 Vietnam National Aging Survey (the country's first national survey of older persons) in conjunction with the 2001 Vietnam National Health Survey (the country's most comprehensive health survey), this study addresses three specific research questions including: Are there socioeconomic gradients of self-rated health among older persons in rural and urban Vietnam in 2001 and 2011? Did inequality pattern that existed in 2001 remain consistent or altered across the two time periods? Were consistencies or alterations uniform across rural and urban locations?

### **131. Community-level effect of the maternal health voucher program on out-of-pocket spending on delivery services at private health facilities in Uganda**

*Francis Obare, Population Council; Ben Bellows, Population Council*

This paper examines the community-level effect of the maternal health voucher program on out-of-pocket spending on delivery services at private health facilities in Uganda. Household-level data were collected before (in 2008) and two years after the program started (in 2010-2011) among women aged 15-49 years who had a birth in the 12 months preceding the survey. A total of 1,569 women were interviewed in 2008 with 327 most recent births occurring at a private health facility; the corresponding figures for 2010-2011 were 666 women with 196 most recent births occurring at a private health facility. The effect of the program is determined by difference-in-differences estimation through simple comparison of changes in proportions as well as the estimation of a multilevel random-intercept logit model. The results show that there was a significantly greater decline in the proportion of women that paid for delivery services and in the likelihood of paying for the services at private facilities in exposed than in non-exposed villages. The findings indicate that the maternal health voucher program significantly contributed to reductions in the likelihood of paying out-of-pocket for delivery services at private health facilities in the regions where it is implemented.

### **131. Out-of-pocket expenses for Maternity Care in Rural Bangladesh: A Public – Private comparison**

*Md. Moshir Rahman, The Population Council; Forhana Rahman Noor, Population Council, Bangladesh; Ubaidur Rob, Population Council*

This paper examined out-of-pocket expenses incurred by women for availing maternal health care services at public and private health facilities. This article used data from a baseline household survey evaluating the impact of demand side financing vouchers on utilization and service delivery for maternal health care. The survey was conducted in 2010 among 3300 women who gave birth within previous 12 months from starting date of data collection. Information on costs incurred to receive antenatal, delivery and postnatal care services were collected. Findings reveal that the majority of women reported paying out-of-pocket expenses for availing maternal health care services both at public and private facilities. On average, women paid US\$3.6 out-of-pocket expenses for receiving antenatal care at public health facilities and US\$12.4 at private health facilities. Similarly, women paid one and half times more for normal (US\$42.3) and cesarean

deliveries (US\$136.2) at private health facilities compared to public health facilities. On the other hand, costs for postnatal care did not vary significantly between public and private health facilities. Utilization of maternal care services can be improved if out-of-pocket expenses can be minimized.

### **131. Subsidizing consumer cost for obstetrics and newborn care in Bangladesh: opportunities and challenges**

*Ismat Ara Hena, Population Council; Ubaidur Rob, Population Council; Mst. Farhana Akter, Population Council; Nargis Sultana, Population Council*

Maternal and child health programs are yet to achieve desired impact on the obstetric and newborn care services utilization from public-sector health facilities in Bangladesh. Home delivery and untrained providers largely contribute to the underutilization of the existing obstetric and newborn care services provided at facilities. Demand-side barriers particularly cost remains a key challenge to utilize MNCH care from facilities. This paper explore whether subsidized consumer cost increases utilization of obstetrics and newborn health service from facilities. Financial assistance in the form of coupon was provided to poor pregnant women to cover transportation and medical cost for receiving services from facilities. A rigorous process consisting of community assessment and use of poverty tool was employed to select eligible women. Three-fourths of the poor pregnant women were identified as eligible for coupon distribution from 20,833 pregnant women from 2 districts. Seventy nine percent coupons were utilized for receiving the ANC services followed by institutional delivery, PNC, and pregnancy complications care. The most cited reason for non-use of coupon is inadequate knowledge about the coupon and transportation cost. Round trip transportation costs and intensive advocacy at the community will increase the coupon use.

### **132. An Assessment of DHS Estimates of Fertility and Under-Five Mortality**

*Thomas W. Pullum, Demographic and Health Surveys; Bruno Schoumaker, Université Catholique de Louvain; Stan Becker, Johns Hopkins University; Sarah E.K. Bradley, University of California Berkeley*

DHS surveys are the main source of estimates and analyses of fertility and under-five mortality in developing countries. All of these estimates and analyses are based on assumptions about the underlying accuracy of the events and dates in the birth histories. The main concerns of the proposed paper are whether the assumptions are valid and the sensitivity of various measures and analyses to deviations from the assumed accuracy. Three potential weaknesses in the data can be identified: the representativeness of the respondents and the accuracy of their reported ages; possible omission of births in the birth history; and systematic displacement of events. Each of these possible sources of distortion will be examined with statistical methods, building primarily on the leverage provided by multiple surveys in the same country. The second part of the assessment concerns the impact of errors on key outcomes. Those outcomes will be specified in advance and will include measures of levels and trends in rates such as the TFR and neonatal mortality rate and coefficients in statistical models.

### **132. Measuring use of the lactational amenorrhea method through the Demographic and Health Surveys: data quality and implications**

*Madeleine Short Fabric, United States Agency for International development; Yoonjoung Choi, United States Agency for International development*

Our study purpose is to assess data quality of self-reported current use of the Lactational Amenorrhea Method (LAM) in the Demographic and Health Surveys (DHS). LAM, an important contraceptive method during the postpartum period, is a modern contraceptive with an effectiveness rate of 98% for the six month postpartum period when used correctly. Our study's specific objectives are: 1) to examine accuracy of self-reported LAM use compared to the constructed correct practice variable, and 2) to explore differentials in accuracy measures by

characteristics at the individual-level and survey-level by analyzing data from 73 DHS conducted in 45 countries since 1998. Findings reveal that on average only 26% of reported LAM users met criteria of correct LAM practice across the surveys, indicating potentially unacceptably low user effectiveness at the population level. We discuss implications for future DHS data collection efforts, and implications for family planning and maternal and child health programming.

### **132. The Consistency of Reports on Siblings and Children in Demographic and Health Surveys**

*Bruno Masquelier, Université Catholique de Louvain*

Data collected on the survival of siblings and children in DHS are the cornerstone of the estimation of adult and child mortality in developing countries. To date, few attempts have been made to evaluate their consistency. Data on siblings are compared here with information on the children of women of the preceding generation, both at the aggregate and individual level. First, the average size of sibships reported in DHS is compared with the average number of children ever born reported in earlier surveys. Contrary to a common assumption, declines in the number of siblings by respondents' age are not necessarily a sign of larger recall errors by older respondents. Second, in a subsample of DHS, sibling histories reported by young women residing with their mother are evaluated against birth histories reported by their mothers. Inconsistencies between mother's and daughter's reports are frequent. The daughters tend to report fewer siblings than expected from their mother's birth history, but more adult deaths. Implications for the indirect estimation of mortality and potential refinements of the survey design are discussed.

### **132. How accurate are proxy reports of partner's pregnancy wantedness?: Evidence from Australian couples.**

*Anna Reimondos, The Australian National University*

Unwanted fertility is an important concept for understanding fertility behaviour. In Australia, about 10% of live births between 2005-2008 are estimated to have been unwanted, and a further 10% were mistimed in that they occurred earlier than desired. One criticism of measures of unintended childbearing is that they are usually only based on the views of one parent, typically the mother. In recent years, there has been increasing awareness of the need to consider men's roles and to study childbearing decision in the context of the couple. To this end, many surveys ask respondents to provide proxy answers on behalf of their partner. While proxy reports can be a cost-effective and simple way to gain information about the partner, without actually interviewing them, there has been little systematic research assessing their accuracy. Using data from a 2008 Australian survey we assess the accuracy of proxy reports of pregnancy wantedness by directly comparing them with the partner's responses. We find that proxy reports are accurate in 87% of cases. In the remaining 13%, they either over or underestimated the degree to which the partner wanted the pregnancy. Proxy reports are often inaccurate when the partner did not want the child.

### **133. Influence of Sexual abuse on emotional and sexual health of boys: evidence from economically marginalized community using mixed method approach**

*Nandita Bhatla, Icrw; Pranita Achyut, Icrw; Prakash Chandra Mishra, Tata Institute of Social Sciences (TISS); Shubhada Maitra, Tata Institute of Social Sciences, Mumbai, India*

Societal denial and ignorance, coupled with shame and fear of being ridiculed contribute to the grave underreporting of child sexual abuse and exploitation. While both boys and girls are vulnerable, few studies have explored the experiences of boys. ICRW conducted a retrospective study among men aged 18-22 years using quantitative and qualitative research techniques, to understand the experiences, consequences and coping mechanism and suggest programmatic recommendations. Quantitative data was collected with 117 youth, following which in-depth interviews could be completed with 9 who consented to talk about it. 57 percent (of the 117)

reported experiencing sexual abuse and in three-fourth cases, the perpetrator was known to them. Among these , 40 percent shared their experience with someone, and none talked to their parents. The IDIs revealed that abuse was not a sporadic event but progressive and repetitive, and actions spanned a wide continuum. The immediate reaction for most was of “blinking out”. Other consequences included inability to focus, poor academic performance, sexual confusion, distraction, anger and shame. Respondents expressed multiple emotions as they struggle to make sense of the experience, and come to terms with it. Programs should focus on awareness among children and adults and establish response mechanisms

### **133. Measuring the effect of multi facet violence experience among adolescent: an ecological developmental perspective**

*Madhumita Das, International Centre For Research On Women; Sancheeta Ghosh, Icrw; Ravi Verma, International Centre for Reserach on Women (ICRW)*

Social development among youth is deeply rooted in opportunities, skills and recognition that acquire through interactions with family members, peers, teachers, neighbors, coaches and many others. Based on the ecological developmental framework this paper tried to assess the impact of multi facet violence exposure during childhood among boys on their violent behavior. The results shows that family processes, peer relationship, and neighborhood developmental trajectories in relation to violence increases the likelihood of perpetration of violence among youth. The gender equitable attitude which is a manifestation of learning from the very childhood have a huge influence on the likelihood of perpetration of physical as well as sexual violence among young boys.

The research indicates an early intervention strategies to better address the full complexity of influence that lead to aggressive behavior in the social ecology of childhood and early adolescence.

### **133. Probation and recidivism in Italian juvenile crime: estimating the effect of intergenerational transmission of crime through a cohort of young criminals**

*Donatella Lanari, University of Perugia; Odoardo Bussini, Università di Perugia; Luca Pieroni, University of Perugia*

The purpose of this study is estimating the role of the parental criminality in determining juvenile crime in Italy. We focus on the effect of probation, a policy applied in Italy to juvenile offenders that is alternative to other specific measures and punishments related to juvenile law. We follow criminal activities of a cohort of individuals (1987) before age 18 and merge a representative survey with data from Prison Administration Department to follow the same young criminal for the minimum of 6 years. To estimate this impact, we calculate recidivism rates at 5 and 6 years of individuals treated with probation. The presence of parents that determine an intergenerational transmission of crime increases the measures of the effect of the recidivism rate in a range from 10 and 25 percentage points, based on the estimator used but irrespective of length in which recidivism rate is measured. The clear role of the parents in determining juvenile crime suggests likely social and economic benefits to extend probation to young adult.

### **133. Understanding the lifelong influence of men's childhood experiences of violence**

*Juan Manuel Contreras, UN Women; Brian Heilman, International Center for Research on Women; Gary Barker, Instituto Promundo; Ravi Verma, International Center for Research on Women*

This study focuses on the situation of abuse that men experienced during childhood and provides the opportunity to better understand the consequences of that abuse. The information is based on the International Men and Gender Equality Survey (IMAGES). Data presented come from selected locations in: Brazil, Chile, Croatia, Mexico, India and Rwanda.

Men's reports of experiencing violence during childhood are very common in all study locations. Parents' educational attainment, fathers' participation in domestic duties or childcare, and equitable decision-making in the childhood home can all reduce the likelihood of violence. Childhood experiences of violence are associated with later adoption of inequitable gender attitudes around decision-making, violence against women and notions of masculinity. The most consistent influence on ever having perpetrated IPV is having witnessed one's mother being hit by her male partner.

Childhood experiences of violence can also increase men's likelihood to resort to violent means of conflict resolution in adulthood and can significantly influence how adult men interact with their partners and children beyond the domain of violence.

Violence against children has significant and noteworthy repercussions on the mental health of men as adults.

### **134. Changements de comportement matrimoniaux et féconds en Afrique : l'émergence de nouveaux rapports de genre**

*Thérèse Locoh, Institut National d'Études Démographiques (INED); Zahia Ouadah-Bedidi, University Paris Diderot (URMIS) /Institut National d'Études Démographiques (INED)*

En Afrique, de nouvelles générations de femmes sont à l'œuvre, dans des sociétés ébranlées par les crises et parfois des guerres civiles. Beaucoup plus que leurs mères, elles sont scolarisées, citadinisées, informées, et participent à la vie économique moderne avec ses atouts (emplois) et ses revers (précarité, chômage)... Le saut culturel est brutal. C'est dans ce contexte que la transition de la fécondité avance, surtout en ville, sur fond de changements de comportements matrimoniaux. Les relations de genres évoluent. Certaines enquêtes démographiques et de santé récentes se sont adressées aux hommes comme aux femmes, grand saut qualitatif par rapport aux habitudes de ne s'adresser qu'aux femmes en matière de mariage, de fécondité, de planification familiale, de vie en couple. De nouvelles variables ont été introduites allant de la prise de décision au sein du ménage, aux faits et opinions sur les violences de genre (notamment en cas de refus d'un rapport sexuel). Quatre pays d'Afrique de l'Ouest disposent de deux enquêtes successives de ce type : Bénin et Mali (2001 et 2006), Ghana et Nigeria (2003 et 2008). Ce riche matériau nous permet de mettre ici en relation la nuptialité et de la fécondité avec l'évolution des rapports de genre

### **134. Do Women Gain Autonomy Through Marriage? Evidence from Rural Malawi**

*Kim Deslandes, Université de Montréal*

Throughout their life, women go through different stages where their autonomy is challenged. Some develop strategies to free themselves from a controlling family member and eventually, if married, from their partner. Thus, navigating through different unions may bring some women to gain more confidence in themselves and in return to have greater control of their own life. However, the relationship between the marital paths and women's perceived autonomy remains unclear. Our main goal is to evaluate the extent to which the various marital trajectories used by women in sub-Saharan Africa affect their perception of autonomy using the Malawi Diffusion and Ideational Change Project. To achieve our goal, we use sequential analysis to illustrate women's marital paths. Subsequently, we use similarly grouped marital trajectories as our main independent variable. Autonomy, our dependent variable, is represented by a series of questions on different dimensions commonly used in the literature. We use ordered logistic regression models to predict autonomy and control for covariates shown to have some effects on women's empowerment. We expect that ever-divorced women will be more likely to have higher autonomy particularly for the dimensions of divorce, decision-making and negotiation of safer sex.

### **134. Empowerment of married and separated/divorced women in Mexico**

*Irene Casique, Universidad Nacional Autónoma de México*

Most of the instruments developed for the measurement and analysis of empowerment have taken as a subject of analysis the married women or in union, proposing various indicators which take as a reference a marital relationship. However we want to look at possible differences that women with different marital status may have in terms of some dimensions of their empowerment process and then inspect and compare the role that these empowerment's dimensions play in their risk of partner violence. This work has three objectives. First, the estimation of various indexes related to the empowerment of women. Second, to compare the levels of married and unmarried women across these indicators. And third, to examine the associations between these empowerment dimensions and married and unmarried women's risk of partner violence. The data used comes from the Mexican National Survey of Household Relationship's Dynamics 2011 (Endireh 2011). For the first objective Factorial Analysis is used to estimate additive and weighted indexes. For the second objective we use Analysis of Variance and t-tests. And finally we estimate separated logistic models (for married and unmarried women) to examine the associations of these empowerment dimensions and the risk of partner violence.

### **134. Is marriage still advantageous to women's health? A trend study on marriage and women's health in Korea from 1998-2010.**

*Choryok Kang, Seoul National University; Youngtae Cho, Seoul National University*

It is well known that married people have better physical and mental health than their non-married counterparts. But Korean demographic trends in women's marriage are additional evidence that might address that single life of women is becoming less disadvantaged. The proportion of the population aged 29~34 and never-married has dramatically increased for women, and most of never-married women become better educated and make progress achieving socioeconomic independence (Statistics Korea, 1975~2010 Census). With higher rate of women's non-marriage, the norm of 'proper age' at marriage and the meaning of never-married has dramatically changed, and even social stigma used to be attached to single women aged over the 'proper age' has notably diminished (Yoon, 1994; Kim, 2005). These changes suggest that non-married women in Korea now becoming more and more selective, which may affect the health of this population as compared to those married counterparts. Therefore, the purpose of this study is to investigate not only the relationship between marital status and the health status, but also the health differentials in women by marital status and employment status to assess the meaning of the changes among Korean women.

### **135. Achieving Intended Family Size in Japan**

*Setsuya Fukuda, National Institute of Population and Social Security Research; Ryuichi Kaneko, National Institute of Population and Social Security Research; Rie Moriizumi, National Institute of Population and Social Security Research*

This study aims to provide social, demographic and economic characteristics of Japanese married couples who achieved their early expected family size during the first decade of the 21st century. Using the latest panel data of nearly 30,000 men and women, the study provides detailed profiles of married couples who achieved their initial levels of expected family size based on ten years of observation. By taking advantages of longitudinal data, we examines the effects of important but often neglected factors such as gender role attitudes, childrearing experiences, spousal share of household chores and economic contributions, and economic stabilities of the household. The survey design also allows us to examine how adjustment is made between spouses when their fertility intentions are mismatched. To supplement our findings, we also conduct another set of the analysis on the changes in couples' expected family size using the same dataset. This supplemented analysis sheds light on the evolution of the fertility intentions and aims to examine

the individual characteristics associated with declining intended family size. By integrating the two results from the panel data analysis, this study seeks the link between subjective and behavioral aspects of low fertility in the 21st century Japan.

### **135. How much is enough? A longitudinal analysis of intentions to stop childbearing in rural Mozambique**

*Sarah Hayford, Arizona State University; Victor Agadjanian, Arizona State University*

In much of sub-Saharan Africa, strong pronatalist norms emphasize the importance of childbearing, and social, economic, and demographic uncertainty makes it difficult to predict individual outcomes. Given these conditions, some demographers argue that women have difficulty forming long-term fertility plans and thus challenge the utility of reported desires to stop childbearing. But despite these conceptual challenges, intentions to stop childbearing have predictive power. This paper uses three waves of survey data collected in rural southern Mozambique to study stability and change in the desire to stop childbearing. This extended abstract presents bivariate statistics describing aggregate and individual-level change in the desire to stop childbearing. The completed paper will apply multivariate models to assess the degree to which these changes are shaped by purely demographic factors (age, parity) and by other individual and household characteristics (health, marriage and marriage characteristics, household economic circumstances, etc.). Results will be used to revisit the theoretical and empirical relevance of target models of fertility in sub-Saharan Africa.

### **135. Swedish men's fertility intentions and behaviors**

*Gayle Kaufman, Davidson College; Livia Sz. Olah, Stockholm University*

This study examines three aspects of men's reproduction – reproductive attitudes, fertility intentions, and fertility outcomes. We seek to contribute to research that so far mainly addressed low levels of fertility by focusing on women's employment and delayed childbearing. Sweden provides a unique context because of its explicit policies aimed at promoting gender equality in both work and family realms. We will seek to address the role of career goals, leisure goals, and gender role attitudes on Swedish men's fertility intentions and behavior. We use longitudinal data from the Swedish Young Adult Panel Study (YAPS). Our results indicate that young Swedish men think sufficient income, suitable housing, and a good partner are important in planning for children. Yet these preconditions, except for having a suitable partner, are seen to be fulfilled for only a minority of men. These perceived economic conditions have an impact of fertility intentions as those with sufficient income and suitable housing are less likely to intend to delay having children than their less well-off counterparts. Next we will examine the impact of these factors on fertility outcomes, and also address the role of career and leisure goals explicitly.

### **135. When the first baby arrives and the second loses chance. Changing couple's satisfaction and fertility expectations after the arrival of the first child.**

*Francesca Luppi, Universitat Pompeu Fabra, Barcelona, ES; Letizia Mencarini, University of Turin Dept. of Economics & Collegio Carlo Alberto*

The literature describes the arrival of the first child as an “unexpected” break in the couple's equilibrium, source of crisis between the partners and sliding down satisfaction with different dimensions of life. The paper clarifies under which conditions changes in couple's life satisfaction can effect parents' expectation about the progression to the second child after the arrival of the first child. Couples postponing the progression to the second child are the ones reducing more the expectations to have another child during the first year of life of the first child. Among all the dimensions of satisfaction, satisfaction with the partner seems the strongest predictor for the quickest progression to the second birth. At the same time, couples that better predict how parenthood is going to be hard reduce less the expectation to have another child. Couples that do

not find confirmation in their expected level of parental commitment decrease more their level of satisfaction and postpone the decision to have the second child. The analyses are conducted based on 9 waves (from 2001) of the Household, Income and Labour Dynamics in Australia Panel Survey.

### **136. An Assessment of Out of Pocket Expenditure on Child Bearing Process post Janani Suraksha Yojana: A Case from India**

*Dipti Govil, International Institute for Population Sciences (IIPS); Neetu Purohit, Indian Institute of Health Management Research, Jaipur; Shiv D Gupta, Indian Institute of Health Management Research, Jaipur*

Objective of the paper was to assess OPE incurred by beneficiaries in accessing maternal health services and the extent to which Janani Suraksha Yojana (JSY) incentives could share the burden of total cost incurred. A community based study was conducted in an Indian State on 424 women, who delivered in last one year. Data was also collected from state government's record on yearly expenditure under JSY. Study was funded by UNFPA, Bangkok.

The OPE per delivery was USD 29.2 if conducted at home; USD 73.6 at public facility and USD 157.8 at private facility. OPE varied by type of delivery, delivery with or without complications and place of ANC. The cost was USD 44.7 and 152.1 for normal and complicated delivery, respectively.

Direct and indirect expenditure incurred by government per delivery was USD 35.1 and 11.6 respectively. After deducting government expenditure from OPE, new OPE per delivery came out to be USD 9.6 for normal delivery (without complication) and USD 117 for complicated delivery. The government shared 55% of the total cost (OPE) per delivery. In case of the normal delivery the share increased to 83% whereas in case of complicated delivery it reduced to 29%.

### **136. Incidence, its correlates and effects of maternal health care expenditure in India**

*Saradiya mukherjee, JNU; Rakesh Chandra, Jawaharlal Nehru University*

This study measures the incidence and intensity of 'catastrophic' and impoverishment effect of maternal health care expenditure of households and its socio-economic correlates in urban and rural areas separately. Using data from 60th round of National Sample Survey, we find that urban household spent almost twice that of rural households on maternal health care. A little more than one third households suffered catastrophic payments in both urban and rural areas. On the other hand, the head count was greater among illiterate women living in urban areas compared to those living in rural areas. After adjusting out-of-pocket maternal health care expenditure, the poverty in urban and rural areas increased by almost equal percentage points. Increasing education level, higher consumption expenditure quintile and, higher caste of women was associated with increasing odds of impoverishment due to maternal health care expenditure. To reduce maternal health care expenditure induced poverty, the demand-side maternal health care financing programs and policies in future should take into consideration all the costs incurred during prenatal, delivery and postnatal periods and focus not only on those women who suffered catastrophic expenditure and plunged into poverty but also those who forgo maternal health care due to their inability to pay.

### **136. Reproductive and Child Health Programme in Bihar, India: Does Expenditure Matters to Performance?**

*Amit Kumar, International Institute for Population Sciences (IIPS)*

Since the launch of the reproductive and child health policy regime in 1998-99, there has been a massive rise in government expenditure on family welfare programmes in India. This paper makes a systematic effort to assess the performance of the family welfare programmes vis-à-vis trends in expenditure. The trends in key performance indicators for National level and Bihar reveal that

progress has been slow and limited in the post-rch policy regime. Contraceptive prevalence coverage has decelerated, and the increased in the Child immunization and institutional delivery. Consequently, the pace of reduction in the couple protection rate, total fertility rate and infant mortality rate has slowed. . It is evidentially clear that in the absence of suitable mechanism to operationalise of RCH programme, the exponential increase in expenditure alone cannot lead to commensurate a positive impact on key performance and outcome indicators. There is need suitable mechanism to operationalise RCH programme.

### **136. The Impact of Subsidized Birth Control for College Women: Evidence from the Deficit Reduction Act**

*Brad Hershbein, W.E. Upjohn Institute for Employment Research; Emily Collins, University of Michigan*

This paper uses a unique natural experiment to investigate the sensitivity of American college women's contraceptive choice and sexual behavior to the price of prescription birth control (the Pill). In 2005, Congress inadvertently increased the effective price of the Pill at college health centers from \$5 to \$10 a month to \$30 to \$50 a month. Using two different data sets, we employ quasi-difference-in-differences and fixed effects methodologies for identification. Our benchmark estimates show that this change reduced Pill usage by at least 1 to 1.8 percentage points, or 2 to 4 percent, among all college women. For those who lack health insurance or carry large credit card balances, the decline was two to three times as large. Women who lack insurance and have sex infrequently appear to substitute toward emergency contraception; uninsured women who have sex frequently appear to substitute toward non-prescription methods. We find small but significant decreases in frequency of intercourse and number of sex partners, suggesting that some women may be substituting away from sexual behavior. Finally, using a unique survey on how and where birth control prescriptions are filled, we are able to bound the price elasticity of Pill usage between -0.10 and -0.02

### **137. Projection of Older Adults with Disability under the Demo-Socio-Economic Factors in China, 2006-2050**

*Lei Zhang, Institute of Population Research, Peking University; Xiaoying Zheng, Peking University*

**Objectives:** This study creates a new model to predict the changing tendency of ageing population with disability, and gave some evidences on prevention and reduction of disability risk. **Data & Methods:** A cross-sectional data of Second China Sample Survey on Disability (2006) is used in this study. This study combines PDE model with the methods of static covariate-direct prediction, static covariate by type prediction and dynamic covariate effect prediction respectively. **Results:** The future total number and growth rate of older adults with disabilities in China are very striking. Under scenario II, about 1.5 million of older adults increase annually from 2006 to 2040, and more than 2.5 million increase annually from 2040 to 2050. Total number in 2050 is 3.05 times of 2006. And population ageing, sex, place of residence, marital status, education, income, provincial GDP per capita are significantly affect the prevalence of disability among the older adults. **Conclusion:** Social and economic factors affect the development process of future changes in size of population with disability, but the most far-reaching impact factor is population aging, so the health expectancy of the elderly population is most worthy of attention.

### **137. Socio-economic inequality in the occurrence of disability in India: Evidence from a large scale sample survey**

*Mohammad Hifz Ur Rahman, International Institute for Population Sciences (IIPS)*

**Background:** Inequalities in disabilities act as a brake on economic growth and development. As there is no direct mortality associated with disabilities, they remain at the bottom of the

government's priority list. So the studies related to disability in India are limited. Moreover, none of the studies used the inequality measures to understand the inequality in occurrence of these disabilities. Objective: We use data from India Human Development Survey conducted in 2004-05 to test the hypotheses: Occurrence of different kinds of disabilities is not associated with economic condition of the population. Methods: The present study had measured four outcome variables: locomotor disability, visual impairment, hearing impairment and speech disability. Persons who were unable to perform their chores or performed with difficulty were taken as disable. Bivariate analyses rich-poor ratio, Concentration curves, adjusted concentration indices, dominance test were used to understand economic inequality. Binary logistic regression models and Wald test were also used. Results: Findings of the study reject our hypothesis. Findings suggest huge socio-economic inequalities in the occurrence of different kinds of disability. Poorer sections of the society have the disproportionately higher prevalence of all types of disability.

### **137. The Right to Sight: Distribution and Prevalence of Visual Difficulty in Indonesia**

*Evi Nurvidya Arifin, Institute of Southeast Asian Studies; Aris Ananta, Institute of Southeast Asian Studies*

One group of human rights is to guarantee an adequate standard of living to everyone. This paper narrows the focus to health, particularly with respect visual difficulty. Indonesia is the ninth country who signed the UN Convention of the Rights of Persons with Disabilities in 2007. It took four years for Indonesia to finally ratify the convention, precisely on 18 October 2011. At almost the same time, the Indonesia 2010 population census collected information on visual difficulties. It is the first nationwide data gathering information on this type of disability. It is a self-assessment which takes three options: no difficulty, some difficulty and severe difficulty. Therefore, the paper aims at providing reference statistics, distribution and prevalence, on visual difficulty estimated from the Indonesia 2010 Population Census. We use two types of measurements: distribution and prevalence. It takes into account differential by age, sex and place of residence. This paper also examines the extent Indonesians have the financial ability and accessibility to improve their visual ability; and the laws as well as their enforcement to help improving the visual ability.

### **137. Washington Group on Disability Statistics: Development of a survey questionnaire module on child functioning and disability**

*Mitchell Loeb, National Center for Health Statistics*

The Convention on the Rights of Persons with Disabilities calls for Member States to collect statistical and research data to enable them to formulate and implement policies that would improve the lives of persons with disabilities. The importance of improving statistical information on disability in order to develop internationally comparable indicators for purposes of policy design have been stressed by the UN General Assembly. This presentation will provide an overview of the work carried out by Children's Work-Group of the Washington Group on Disability Statistics (WG). In particular, the development of a survey questionnaire module designed to compile statistics on child functioning and disability. The primary purpose in developing these questions is to investigate the opportunities of participation of children with disabilities compared with same age children taking account the definition of disability set out in the CRPD. The questionnaire module is intended to identify the majority of those with difficulties in a range of ICF-CY domains. The presentation will outline the domains and questions developed as well as anticipated cognitive and pilot testing of questions developed.

### **138. Smart Agent-based Simulations for Elderly People's Evacuation Schemes in Case of Natural Disasters**

*Ludovico Ciferri, International University of Japan*

The "Great East Japan Earthquake" of March 11th, 2011, with the subsequent tsunamis and the nuclear power plant crisis, was the largest natural disaster to hit Japan since the end of the Second World War. Due to the tsunamis that represented one of the world's deadliest natural event in recent times, the human toll nearly amounted to about 18,000 persons dead or missing, of whom more than half were 65 years or older. Within the current demographic scenario of ageing populations, the event highlighted the need to handle contingent natural disasters with improved evacuation schemes, particularly when more and more cohorts of elderly are affected. Smart simulation techniques, particularly Agent-Based, at the state of the art can predict with accuracy the effect of operational logistics' decisions. In this paper we highlight the potential advantages of the systematic introduction of the practice of Agent-Based simulation to support the definition and the assessment of alternative evacuation schemes that might also take into consideration vulnerable categories. Agent-Based approach therefore would be expressive enough to include, in evacuation studies, not only adult evacuees' heterogeneous behavior but also the consideration of the peculiarities of elderly people's mobility together with their perceptive limitations.

### **138. T-health: Standard Smart TV as e-Health Platform for the Elderly**

*Masahito Kawamori, NTT*

This paper describes the overview of the architecture and examples of "T-health", a platform for e-Health, utilizing standard Smart TV that interacts with e-health devices. We argue it is especially suitable for the aged. In 2012, the United Nations Population Fund reported that the world's population surpassed 7 billion, a milestone that poses both a challenge and an opportunity. The greater longevity projected for all regions, coupled with a declining fertility, means that more and more countries will be confronting the challenges posed by the ageing of their populations. As the aging population grows rapidly, the cost of healthcare is also rapidly rising, giving rise to potential economic problems. This made many to look to e-Health as a means to ameliorate the situation. Due to its popularity, ease to use and to robustness, television sets, especially its modern Interactive TV model or Smart TV, can be a good interface between the elderly and e-Health services. This paper describes "T-health", an implementation of multimedia application platform for e-Health, utilizing standard IPTV. This paper gives the overview of the architecture and examples of the T-health system, how it integrates multiple devices for e-health, such as sensors.

### **138. Technological Perspectives for Promoting Healthy Aging**

*Suntae Jung, Samsung Electronics*

"Aging Society" is a worldwide phenomenon and an inevitable important issue we must cope. The purpose of this study is to find technological perspectives for promoting aging in health based on amalgamating of various methodologies such as future research, user experience design and service design. We use environmental scanning to extract technological ideas from various information sources, trend keyword clustering to filter out common technological themes, futures wheel to expand themes reflecting direct and indirect future related consequences and domain expert review to refine scenarios. Moreover, we defined representative personas, fictitious user who faithfully reflects the regional characteristic, to make scenarios more adequate for different regional issues. Finally, we drew common themes for healthy aging from scenarios and provide technological perspectives to accomplish those themes and scenarios. As a result of study, we found that there were four main themes for healthy aging such as maintaining independence of activity of daily living, living younger than their real age, protection against disease and safety from the hazard. Accompanying these common themes, we also suggest the technological perspectives for promoting healthy aging: smart sensing and interaction, happiness giving

intelligence, promoting health and safe environment technologies, automating chore tasks and assisting human abilities.

### **139. Educational Change and its Impact on Fertility and Demographic Dividend of Future India**

*Angan Sengupta, Institute for Social And Economic Change, Bangalore*

This study attempts to explore the effect of educational attainment on the age-sex composition of India's population; and thus to understand the potential of its emerging demographic dividend till 2051, through multi-state population projection by levels of education. We have followed the framework of IIASA-Oxford's new rounds of population projections by levels of educational attainment (to be released in the fall of 2012) regarding survival rates and educational attainment. The analysis is based on two scenarios where education profile in India will remain constant as of 2006; and will improve over the time. Further, we have assumed a fertility trend till 2049 based on the recent experience (Sample Registration System, 2000-2010). The projection is based on the population census of India (2001). Recent trend shows that in India, fertility rates across educational groups will not converge in near future. If India continues with current education profile, its TFR will reach 2.26 in 2021 and likely to remain constant, whereas given the assumed educational attainment they will reach the below-replacement-level TFR in 2041, with a slow but continuous decline in fertility rates. The demographic dividend is found to be highly dependent upon the level of education, which increases the productivity.

### **139. Family size and educational outcomes among young people in India**

*K.G. Santhya, Population Council; Francis Xavier Arockiavictorial John, Population Council*

During the last couple of decades, India has experienced a steady fall in its fertility. Studies exploring the impact of reductions in family size on life choices of young people, including educational outcomes among them are, however, limited in India. Drawing on data obtained from a sub-nationally representative study of youth in India, this paper seeks to examine the associations between declines in family size and educational outcomes among young people. Data from 13,627 and 6,824 young women and men aged 20-24, respectively, are used. Preliminary findings underscore that declines in family size is positively correlated with educational outcomes among young people. Young women and men from households with no/single sibling were more likely to have completed secondary education, and attended the last class regularly. These effects were more apparent in more progressive states than less progressive states.

### **139. Fostering the Human Resource Base for Sustainable Development: Toward a 21st Century Population Policy Paradigm**

*Wolfgang Lutz, International Institute for Applied Systems Analysis (IIASA)*

I will start with the need for a new population policy paradigm that covers the concerns of ageing and shrinking populations in addition to those of growing populations. Such a new paradigm should explicitly incorporate education in addition to the conventional age and sex. It thus adds the quality dimension to the consideration of population trends and their consequences. Based on the reconstructions to 1960 and projections to 2060 by age, sex and 7 levels of educational attainment for 170 countries produced at IIASA the returns to education have been estimated for aspects ranging from economic growth, to health, democracy, vulnerability to natural disasters and adaptive capacity to climate change. The strong effect of female education on reducing high fertility makes education a key strategy (together with family planning) towards population stabilization. In the context of ageing and shrinking societies this human resource based approach suggests that higher productivity of better educated younger cohorts can compensate for their smaller number. A consistent new population policy paradigm on fostering the human resource base for sustainable development would also make the population community much more relevant

for the currently ongoing policy discussions about 21st century sustainable development and climate change.

**139. How the decline of family size impact the intergenerational transmission of social inequality: Evidence from Ouagadougou in West Africa.**

*James Lachaud, Université de Montréal; Thomas K. LeGrand, Université de Montréal; Jean François Kobiane, Université de Ouagadougou*

This paper aims to quantitatively assess the effects of the decline of family size on the intergenerational transmission of socioeconomic inequality in Ouagadougou, the capital city of Burkina Faso. More specifically, we will seek to ascertain the extent to which children's schooling outcomes vary across families with fewer versus more children, by social class. Does fertility limitation appear to be as viable (successful) a strategy for poorer families as for richer ones and, if so, might the decline in family size act to reduce the intergenerational transmission of inequality over the long-term? Data are from the DEMENTREND survey that focused on children's work and schooling behavior- on parents and also on grand-parents-, based on a subsample of the Ouagadougou DSS -, based on a subsample of the Ouagadougou DSS, which longitudinally follows a population of approximately 85000 in five neighborhoods in the capital city of Burkina Faso. This work will help us to know how demographic changes (family size and family composition) impact the transmission of social inequalities over three generations.

**141. Client satisfaction in relation to HIV/AIDS care counselling services in Maharashtra, India: A gender focused approach**

*Paramita Dutta, Saksham-Tata Institute of Social Sciences*

Client satisfaction occupies an intermediate step in establishing healthy culture for evaluation of an ongoing programme on HIV/AIDS. However, in India (one of the country where world's highest number of persons living with HIV/AIDS resides) information on HIV/AIDS client satisfaction is almost non-existent. A qualitative study was carried out to explore issues of client satisfaction in relation to HIV/AIDS counselling services. In-depth interviews were carried out among the (22) counsellors and seven FGDs were carried out among the HIV positive group of male, female and transgender population. The study finds a clear distinction between the clients' need according to their gender role. Female clients used to seem more satisfied after receiving the counselling services than other. The need for information on HIV/AIDS among the clients was universal among all the clients. All male clients felt satisfied, when counsellors used to clear their doubts and confusion about HIV/AIDS. Maintaining privacy was crucial for making male clients satisfied. Female clients were keen for receiving emotional support and medical treatment. Social acceptance was given highest priority by the transgender clients. The study suggests that to meet the HIV/AIDS clients' expectations and needs gender specific counselling needs to be practiced.

**141. Increased uptake of HIV testing in sub-Saharan Africa: demographic divergence and opportunities for future growth**

*Sarah Staveteig, MEASURE-DHS, ICF International; Shanxiao Wang, MEASURE-DHS, ICF International; Sara Head, MEASURE-DHS, ICF International; Sarah E.K. Bradley, University of California Berkeley; Erica R Nybro, MEASURE-DHS, ICF International*

HIV testing is an integral component to HIV prevention strategies and a gateway to treatment and care. Over the past decade, the MEASURE DHS project has noted a substantial increase in HIV testing uptake across sub-Saharan African countries, sometimes by more than ten-fold. Drawing from repeated cross-sectional DHS/AIS data in Cameroon, Congo-Brazzaville, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Senegal, Tanzania, Uganda, and Zimbabwe, this paper analyzes demographic divergence in HIV testing uptake within and across countries, with special attention to HIV positive adults. While testing uptake has

increased in all 15 countries with repeated DHS/AIS surveys, gains have been uneven. Using logistic decomposition on pooled cross-national data we differentiate factors associated with being tested that relate to time period of survey and to country-level endowments related to access and outreach from individual socio-demographic characteristics associated with having ever been tested for HIV. Despite dramatic increases in testing uptake, the majority of HIV-positive adults in six countries have no way of knowing their HIV serostatus. Continued expansion of outreach and access to HIV testing will help determine future demand for medical treatment and support for persons living with HIV/AIDS.

#### **141. Resource Needs for HIV in India**

*Subhra Datta, Independent Consultant; Sulabha Parasuraman, International Institute for Population Sciences*

Resource burden to provide necessary care, treatment, support and prevention for HIV is huge on scarce government resources. The current study tries to quantify the resource burden for HIV in India during 2009-2015. The premise being, even after revision of the estimate of PLHA from 5.2 million to 2.5 million in 2006, India still has the third largest share of PLHA in the world. We have used UNAIDS methodology to calculate PLHA, new infection, treatment needs, etc. by Spectrum and Workbook assuming three alternative scenarios which are derived based on treatment and care needs. Components of resource needs that have been considered in this study include prevention among high risk groups, service delivery and health care. The data sources include UNAIDS, Census of India, SRS, NFHS and BSS. Under the three scenarios, PLHA is projected to vary from 2.29-2.73 million in 2015 with an uncertainty bound of 2.24-2.95 million. The number of adults in need of first line ART will range from 0.6 to 1.1 million in 2015. Total resource needs for HIV is projected to be 28 percent of the health budget of Government of India in 2015.

#### **141. Results of Stigma Index Survey among people living with HIV in Russia**

*Ilya Zhukov, United Nations Population Fund (UNFPA); Alexandra Pisareva, Yuri Levada Analytical Centre; Valentina Bodrova, Russian Center for Public Opinion & Market Research; Lidia Bardakova, UNFPA*

Background. The main aim of survey in 2010-2011 was to gather information about the problems of people living with HIV (PLHIV) in Russia. Methods. The sample size was 660 people living with HIV aged 18 and over in 11 major towns in Russia. PLWHIV were involved in conducting of survey at all stages. Results. 35 % of respondents encountered any form of discrimination or stigmatisation due to HIV status . 21 % encountered some form of discrimination from organisations or. 78 % of PLWHIV experienced negative feelings towards themselves. Human rights of 12 % had been violated, 28 % could not say with certainty whether their rights had been violated or not. Only 18 % of those whose rights had been violated, took some kind of action to protect them. 60 % made the decision to be tested for HIV independently and voluntarily. 43 % did not receive any kind of pre – and post testing counselling. 36% say that public health workers displayed discrimination . 23% had received advice from public health workers not to have children at least once since their diagnosis of HIV was confirmed. 4 % of survey participants mentioned that healthcare workers had forced them to have a sterilisation. The survey became an instrument for protecting the rights of people living with HIV. The results were presented and discussed at the State Duma hearings

#### **142. Allegiance and alliance: low fertility in the long shadow of WWII**

*Alexander Weinreb, University of Texas at Austin; Jennifer Johnson-Hanks, UC Berkeley*

Viewing comparative fertility trends through a prism of World War II (WWII) alliances, an odd pattern emerges. The members of the Tripartite Pact—Italy, Germany, and Japan—have among the lowest fertility rates in the world, while the countries that led the Allies at the end of World

War II—Great Britain, the USA, and France—are outliers for their high fertility. This paper first argues that the association is not mere coincidence, but the product of specific cultural and institutional formations that emerged after the war. How could wartime alliances half a century ago influence contemporary fertility? What social, cultural, and institutional forces and processes account for these remarkable differences? And what do those forces and processes imply for theories of fertility more generally? This paper uses long-term national fertility trends to address these broader questions. We argue that many of the economic and cultural factors most critical to fertility rates have deep political roots. A coherent model of low fertility must be embedded in a comprehensive theory of social action. Social action, in turn, entails allegiances and alliances, both individual and collective.

#### **142. Low Fertility and the Reversal of Gender Inequality in Education in Europe: Theory and Hypotheses**

*Jan Van Bavel, University of Leuven*

While men have always received more education than women in the past, this gender imbalance in education has now turned around. For the first time in European history, there are more highly educated women than men reaching the reproductive ages and looking for a partner. I expect that this will have profound consequences for the demography of reproduction because mating practices have always implied that men are the majority in higher education. These traditional practices are no longer compatible with the new gender distribution in education. The objective of this paper is to formulate hypotheses about the consequences for reproductive behaviour in Europe. I expect the following causal chain between the reversal of the gender imbalance in education (RGIE) and fertility: RGIE creates a new, education specific mating squeeze that affects the process and expected pattern of assortative mating, which in turns affects the timing, probability, and stability of union formation, which eventually is expected to have implications for fertility. Each of the links in this chain are discussed in detail.

#### **142. Social Change, Social Networks, and Family & Fertility Change in Japan**

*Ronald R. Rindfuss, University of North Carolina at Chapel Hill; Emi Tamaki, East-west Center; Martin P Piotrowski, University of Oklahoma; Minja Kim Choe, East-west Center; Noriko Tsuya, Keio University; Larry Bumpass, University of Wisconsin at Madison*

Japan, unlike most Western countries, has experienced limited movement in several components of the second demographic transition, including non-marital fertility, use of childcare centers, and, somewhat less so, cohabitation. Yet Japan has experienced many of the structural changes found in Western societies that are related to the second demographic transition, including increased education levels with the increases more marked for women than men, rise of the service economy, urbanization, shift to work settings not conducive to caring for young children, and outsourcing of labor-intensive manufacturing jobs to low-wage countries. Using longitudinal and cross-sectional data that include information on knowing relatives, friends and co-workers who have engaged in non-traditional fertility and family behavior, this paper examines the extent to which knowing such people has changed over time and longitudinally over the life course. We also examine the extent to which knowing someone engaged in non-traditional behaviors is patterned by such structural variables as birth cohort, sex and education, as well as the connection between knowing someone who has engaged in non-traditional behavior and one's attitudes toward such behaviors.

#### **142. The impact of income on fertility– breaking up stylized facts**

*Angela Stefanie Luci-Greulich, Université Paris 1 Sorbonne Panthéon (Economics Department)*

Several macroeconomic studies suggest that fertility starts to re-increase with income in highly developed countries. We propose a deeper insight in the mechanisms behind income and fertility

in highly developed countries by focusing on individual fertility decisions linked to education, individual and household income. First, we empirically test whether an U-shaped pattern between income and fertility can be confirmed for micro panel data in European countries. Second, we analyze whether increases in education, in women's wage income and in their partners' wage income have a higher impact on quantum- or on tempo- aspects of fertility. We investigate how birth postponement is affected by 'social status' in France and find important differences between income groups in terms of timing of births. Finally, we discuss policy implications of our results.

### **143. Gender Roles and family stability: the influence of a more active**

*Ann-Zofie Duvander, Stockholm University; Trude Lappegard, Statistics Norway*

Family instability has been linked to increasing proportions of dual-earner couples. These changes have not resulted in equal division of labor at home and create a gap between gender equality in the public and private spheres which is a possible source of family instability. In this paper we ask whether a more active father's role in the family has a negative effect on divorce risk. We will do this focusing on a family policy reform, namely the father's quota of the parental leave, which is a unique Nordic feature with a specific aim of challenging the gender roles in the family. Using unique data from population registers we use the reform to estimate the causal effect of more active father's role on the risk of divorce. The reform was embraced by the fathers and we expect lower divorce risk after the introduction of the reform than before all other equal.

### **143. Maternal repartnering: Do child physical custody arrangements matter?**

*Lawrence Berger, University of Wisconsin; Lidia Panico, Institut National d'Études Démographiques (INED); Anne Solaz, Institut National d'Études Démographiques (INED)*

Women, especially mothers, are less likely than men to form new partnerships after union dissolution. As women are often primary custodial parents, finding and building relationships with a new partner might be prevented by lack of time and energy because they are caring for co-residential children. Given increases in shared physical custody in many countries, however, this stylized fact might change as fathers increase their child rearing responsibilities. Using data from the British Millennium Cohort Study and discrete-time event history analyses, we examine the prevalence and predictors of maternal repartnering into marriage or cohabitation during the first 7 years of a child's life. Preliminary results suggest that, contrary to much of the existing theory, higher levels of visitation by the non-resident father was linked to lower maternal repartnering rates in the following period. This finding was robust to all of the model specifications. We find little evidence linking either child support receipt or child characteristics to maternal repartnering, except for the child's ethnicity. Our results therefore suggest that recent trends toward increased shared physical child custody in industrialized countries are likely to diminish the likelihood of mothers repartnering, at least during the first 7 years of a child's life.

### **143. Divorce determinants in four CEE countries: diversity or uniformity?**

*Aiva Jasilioniene, Max Planck Institute for Demographic Research; Dora Kostova, Max Planck Institute for Demographic Research (MPIDR); Ausra Maslauskaitė, Institute for Social Research; Marta Emilia Styrc, Warsaw School of Economics*

Using selected demographic, social and cultural predictors, this paper analyses the risk of divorce in first marriages in four countries of Central and Eastern Europe (CEE): Bulgaria, Russia, Lithuania, and Poland. Due to lack of data, the phenomenon of divorce has been understudied in this region and therefore very little is known about its determinants. Formerly having been part of the socialist bloc, these countries share a lot of similarities in their political history and in their economic and societal development. With respect to their cultural and religious background, certain commonalities and differences can be distinguished that place Bulgaria, Russia, Lithuania, and Poland in various clusters. Drawing on these observations, we aim to investigate effects of

various divorce predictors and to examine whether the seemingly easy identifiable similarities and diversities are reflected in behaviour related to first marital dissolution. Effects of non-marital cohabitation and motherhood status at first marriage that have been found to be of high but different significance in each country receive a special attention in this paper. The study is based on data from the Generations and Gender Surveys carried out in the 2000s and applies techniques of event-history analysis.

#### **143. Family composition and union dissolution among families with children in Sweden**

*Livia Sz. Olah, Stockholm University; Jani Turunen, Stockholm University*

Partnership stability has decreased substantially in Europe, even among families with children. In parallel, new family forms in which not necessarily both parties of a couple are the biological parents of all the children, have become more common. In this paper, we seek to shed more light on the impact of family composition on the dissolution risk among families with children. We focus on Sweden given its strong emphasis on gender equality and generous family support system. We analyze data from the Young Adult Panel Study, conducted in 1999, 2003 and 2009. Hazard regression (exponential model) is our tool of analysis. Our preliminary results reveal that stepfamilies have an elevated breakup risk, but also blended families are more likely to dissolve than intact families. Stepmother families and where both partners have children from previous partnerships but no joint children have the highest breakup risk. Stepfather families that also include joint children have as low dissolution risk as intact families. Hence, our preliminary results suggest that family compositions have a differential impact on family disruption, and it is important to distinguish by the gender of the stepparent as well as between step- and blended families.

#### **144. Economic wellbeing of migrants and non-migrants households in states of India: Does remittances matter?**

*manisha dubey, International Institute for Population Sciences (IIPS); Sanjay K Mohanty, International Institute for Population Sciences (IIPS)*

Studies on economic wellbeing and use of remittances are often limited to international labour migration and less on internal labour migration. But the remittances flow within and among the states of India is large and often linked to the diversity in demographic and socio-economic development in states of India. Using unit data of 64th round, schedule 10.2 of National Sample Survey 2007-08 that covered the employment, unemployment and migration particulars of 125,578 households in the country this paper examines the economic well being and consumption pattern of households that received remittances with those do not receive remittances in states of India. The economic wellbeing is measured in terms of monthly per capita consumer expenditure (MPCE) and pattern of household spending. The differentials in economic wellbeing are examined, controlling for social and demographic characteristics of migrant and non-migrant households using the probit analyses and the ordinary least square regression. Results showed that the mean MPCE of migrant households is significantly higher than non-migrant households in most of the states of India except in Karnataka, Uttar Pradesh and Maharashtra. The average and marginal budget share on health is higher among households receiving remittances than those not receiving remittances.

#### **144. Men's Labor Migration and Schooling of Children Left Behind in Rural Mozambique**

*Scott T. Yabiku, Arizona State University; Victor Agadjanian, Arizona State University*

Although there is substantial existing research on the relationships between labor migration and children's schooling, research on migration typically has emphasized the migrant versus non-migrant dichotomy. Labor migrants, however, are a diverse group: depending on their skills, networks, and available opportunities, some are economically more successful than others. In this

paper, we examine the association between diverse conceptualizations of male labor migration and an important family outcome: the discontinuation of children's schooling. The setting for our analyses is rural Mozambique, a setting characterized by massive male labor migration, mainly to South Africa. The data come from a multi-wave panel study of women that has been monitoring their reproductive health and well-being, children's schooling, and experience with male labor migration since 2006. We examine male migration success and accrued migration experience, and find that both conceptualizations of labor migration benefit children's schooling.

#### **144. Migration of Sri Lankan transnational domestic workers and families left behind: economic benefits vs. social costs**

*Swarnalatha Ukwatta, University of Colombo*

Increasing numbers of Sri Lanka women are migrating for overseas employment as domestic workers. Consequently, transnational families in which mothers are absent for a significant part of the growing up of their children are increasingly common. Although these migrants and the country receive economic benefits, their migration involves social costs such as denounced living and working conditions of women abroad, harmful consequences of the long-term separation of mothers on the well-being of children and other family members and broken marriages due to prolonged separation from their spouses. Therefore, investigation of both economic benefits and social costs of women's migration and identification of specific strategies that could be used to minimize social costs and maximize economic benefits would be worthwhile. This paper reports the findings of the survey done in 2008 by interviewing 400 migrant families and focus group discussions to investigate the economic and social impact of Sri Lankan transnational domestic workers on families in Sri Lanka. It first explains the background information of migrants and methodology of the study. Next, it examines the economic and social impact of their migration on families. It concludes with some policy recommendations based on the findings of the survey.

#### **145. Cross-country comparison of changes in health in U.S., England, Mexico, Taiwan, and Indonesia**

*Jung Ki Kim, University of Southern California; Eileen Crimmins, University of Southern California*

Health status at older ages around the globe has changed due to changes in epidemiological environment, diet/nutrition, medical technology, public and individual health practices. But the change is likely to vary across countries with different economic, epidemiological, and policy circumstances. Using 2 waves of nationally representative datasets from 5 countries with varying income levels, we examine changes in biological risk in US, England, Mexico, Taiwan and Indonesia. Biological risk factors include systolic and diastolic blood pressure (BP), BMI, total, HDL cholesterol, and HbA1c. Our analysis includes those age 50+ who participated in physical exam and blood collection. We find patterns of age-specific onset of high-risk levels of biological risk vary across countries. No single country has the highest or lowest onset levels for all factors. A relatively low-income country, Indonesia, has the highest onset rates for high BP, though its rate of overweight onset is the lowest; while the high-income countries (US, England) have higher onset rates of overweight, their onset rates of high BP tend to be lower. The US had fairly high levels of onset of high HbA1c; England had relatively high levels of high cholesterol onset. Our findings indicate different levels of onset of biological risk across countries with different income.

#### **145. Elderly Well-being and Socioeconomic Status in China and England**

*James Banks, University of Manchester; Xiaoyan Lei, Peking University; Albert Park, HKUST; Andrew Steptoe, University College London; Yafeng Wang, Peking University; Winnie Yip, University of Oxford; Paola Zaninotto, University College London; Yaohui Zhao, Peking University*

This paper compares the relationship between socioeconomic status (wealth and education) and multiple dimensions of elderly well-being--disability, mobility, self-reported health status, memory, depression, and life satisfaction--in a middle-income country (China) and a high-income country (England) based on regression analysis that uses harmonized measurements from the China Health and Retirement Longitudinal Study (CHARLS) and the England Longitudinal Study of Ageing (ELSA). Cross-country comparisons can help identify which relationships are universal and which depend on local contextualizing factors. We find that for physical health measures (self-reported health, ADLs/IADLs, mobility), wealth has stronger relationship in England than in China, with the poorest especially disadvantaged, but that the opposite is true for psychological health measures (life satisfaction, depression). It could be that in China current wealth is less correlated with lifetime wealth, which determines physical health, but that psychological health adapts more quickly to changes in socioeconomic status. We also find that education gradients are greater in China than in England for some measures (ADLs/IADLs, life satisfaction, memory), perhaps indicating that education is a stronger determinant of lifetime opportunities in China.

#### **145. The Ongoing Process of Aging and Health in Middle-Income Countries**

*Cesar Gonzalez-Gonzalez, Instituto Nacional de Geriatria; Roberto Ham Chande, El Colegio de La Frontera Norte*

Some decades ago Mexico was a low-income country. Now it is in a middle-income level, albeit full of disparities including poverty. Such socio-economic path has shaped the life course of the elderly population. Development has been slower than the rapid aging process and its effects on health and social security. Emerging chronic diseases are major causes of morbidity, disability and death, along with prevailing infectious diseases. Social security is on the verge of bankruptcy. The macro situation because of aging is complex. Holistic prospective scenarios drafted over a changing age structure foresee and unaffordable epidemiological transition, impossibility to pay vested pension rights, economic insecurity, poverty, inadequate health system. Looking for elucidation such scenarios can be compared with similar experiences in, Puerto Rico and Costa Rica.

#### **145. Urban-Rural Differences in Chronic Conditions and Health Risk Factors Among SAGE Older Populations: 2007-2010**

*Wan He, U.S. Census Bureau; Paul Kowal, World Health Organization*

In recent decades, a profound health transition has been occurring in low and middle-income countries, where non-communicable diseases are becoming increasingly prevalent and coexisting with communicable disease burdens. Common risk factors for the highest-burdened NCDs are modifiable, which could subsequently prevent or reduce NCD burden. This study uses data from WHO's Study on global AGEing and adult health (SAGE), conducted in China, Ghana, India, Mexico, Russia, and South Africa. We examine the prevalence of chronic conditions and preventive health behaviors of the older population, with a focus on urban-rural differentials. Results indicate that although older rural people had a higher propensity to consume tobacco, alcohol and inadequate fruits/vegetables, they were much more likely to engage in high-level physical activity than their urban counterparts across all six SAGE countries. Furthermore, the higher level of physical activity was carried out in spite of higher disability rates in rural areas. Higher-level physical activity could contribute to lower prevalence of NCDs. The findings provide scope for further benefits from cessation of smoking and heavy drinking, and promotion of healthy

diets and increased physical activity levels, particularly among rural older people in low- and middle-income countries.

#### **146. Evolution de la situation socio-démographique et réponses politico-intentionnelles en Guinée de 1954-2012**

*Tolno Fassa Daniel, Institut National de la Statistique (INS)*

Mis à part les premiers recensements administratifs réalisés à partir des années 1900, la première enquête démographique par sondage organisée en Guinée et scientifique reconnue est celle des années 1954 et 1955 qui a bénéficié de l'appui technique et de l'assistance financière de la France. Depuis cette date, plusieurs opérations de collecte ont été réalisées. Cependant, la valorisation internationale des données qui en ont découlé est à ce jour très limitée. Par ailleurs, à l'instar de la plupart des pays en développement, la Guinée avait marqué son opposition aux résolutions issues de la première conférence internationale sur la population tenue à Bucarest en Roumanie en 1974. Celles-ci à titre de rappel, militaient en faveur d'une maîtrise de la croissance démographique afin qu'elle ne compromette pas le développement économique. Cette position n'a été révisée par les Etats qu'après la mission d'évaluation de la situation démographique réalisée par l'UNPA en 1979 dans certains pays. C'est ainsi que des réponses politiques et institutionnelles ont été envisagées et assorties d'actions concrètes. Cependant, en dépit du recul important de la mortalité, quoique toujours élevée, la fécondité est presque restée stable au tour de 6 enfants par femme. Cette communication essaye d'évaluer ce paradoxe.

#### **146. Neglected Tropical Disease and Education in Tanzania**

*Jungho Kim, Ajou University; Taejong Kim, KDI School of Public Policy and Management; Jinyoung Hyun, KDI School of Public Policy and Management*

Neglected Tropical Diseases (NTDs) are a pervasive public health challenge in many developing countries in Africa, Asia, and South America. The paper proposes to assess (i) the medium-term impact of the NTD management program on the treated children's educational outcomes such as school attendance/primary school completion/test scores on school-leaving exams mandatory for children graduating from primary schools in the country, and (ii) the efficacy of supplementary intervention, provision of access to safe water through newly drilled wells, in controlling the risk of re-infection. Through this research we expect to be able to provide evidence for the efficacy of the NTD management program on children's human capital investment as well as useful suggestions to more effectively address the re-infection risk challenge. The preliminary analysis of difference-in-differences estimator using the school level data finds that the NTD program in Mwanza increased the attendance rate, completion rate and passing rate of the national exam by 2.6%p, 3.2%p and 0.7%p, respectively. The results suggest that the program had a quite sizable impact on attendance and completion by school children, but that its impact on passing the national exam is limited.

#### **146. Searching for Environmental Kuznets Curves of some basics in Africa**

*Douglason Omotor, Delta State University, Abraka, Nigeria; Christopher Orubu, Delta State University Abraka*

In this study, we investigated the relationship between per capita income and environmental degradation in Africa, using longitudinal data between 1990 and 2000. The specific objective was to estimate environmental Kuznets curves for two indicators of environmental quality, namely: lack of access to sanitation, and lack of access to safe water, and to establish whether the estimated relationships conform to the inverted U-shape hypothesis. The results of the empirical investigation generally suggest that evidence of an EKC for lack of access to sanitation is relatively weak. No concrete evidence was found to support the existence of an EKC for lack of access to safe water. The turning point levels of income established for the various indicators of

environmental quality were however generally low. This suggests that African countries may be turning the corner of the environmental Kuznets curve, much faster, and at lower levels of income than expected. This also implies that African countries do not need to wait long for a high threshold per capital income for them to appreciate cleaner environment. Consequently, African countries should still keep up efficiency improvements in form of active policy intervention (and in the face of market failures) to prevent environmental degradation.

#### **147. Working with teams of ‘insiders’: Innovations in qualitative data collection in rural South Africa**

*Enid Schatz, University of Missouri; Nicole Angotti, University of Colorado-Boulder; MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt); Sangeetha Madhavan, University of Maryland; Christie Sennott, University of Colorado and Hewlett/IIE*

The focus of this paper is to highlight how the convergence of two methodological strategies of qualitative research – working in ‘teams’ and with ‘insiders’ – can come together to facilitate access, efficiency and insights into research questions of interest to demographers. Much of the extant literature utilizing a team-based approach tends to focus on teams of two or more professors acting as co-principal investigators. Similarly, it is often “lone” ethnographers, usually from a Northern institution, who use local research assistants with “insider” status to serve as interpreter/key informant. Here we draw on projects embedded in a demographic surveillance site in rural South Africa that integrate both approaches. These projects make use of teams of local, “insider” research assistants, who, although not academically trained in qualitative and ethnographic methods, assume roles beyond translating for the investigators and administering focus groups or in-depth interviews. The three projects conducted in the MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) site in Mpumalanga, South Africa, vary in their use of “teams” and “insiders”, but each brings to light the benefits and limitations of employing the integrated approach.

#### **147. In-Person versus Online Focus Group Discussions: A Comparative Analysis of Data Quality**

*Cory R. Woodyatt, Emory University; Catherine A Finneran, Emory University; Ayesha M McAdams-Mahmoud, Kaiser Family Foundation; Robert Stephenson, Hubert department of Global Health, Rollins School of Public Health*

Introduction: Researchers have begun conducting online Focus Group Discussions (FGDs) as a qualitative research tool; however, there is scant methodological literature examining the data quality of online versus in-person FGDs. Methods: Two online FGDs were compared to two randomly selected in-person FGDs (of 8). Both formats used identical guides and were conducted by the same moderator. FGDs were transcribed, coded thematically, and analyzed comparatively. Results: In-person FGDs were shorter than online FGDs (mean: 120 v. 93 minutes) but resulted in larger word counts (mean 15,907 v. 4,981). However, FGD content was similar: of 20 thematic codes identified, 12 appeared in both, 6 in in-person only, and 2 in online only. Discussion: Online FGDs were acceptable and methodologically successful. In-person FGDs generated greater data depth; online FGDs generated greater data breadth. Codes identified in online FGDs only suggest that sensitive topics may emerge more candidly in online FGDs due to heightened anonymity. However, technical constraints of online FGDs led to less sharing of in-depth stories among participants, and probing for detail proved difficult. Online FGDs, particularly for sensitive subjects, may be an effective method of increasing data breadth and should be considered for parallel use with in-person FGDs.

#### **147. The Qualitative Longitudinal Research. An application to job insecurity in the life course.**

*Fiorella Mancini, Instituto de Investigaciones Sociales- UNAM*

What can say a qualitative longitudinal analysis about changes in the lives of workers, about the historical processes associated with them? To what extent is related the individual level of these narratives with social transformation processes? The aim of this paper will be showcase an exemplary study of Qualitative Longitudinal Research from the analysis of labour markets' insecurity and its ramifications for social uncertainty, based on interviews and ethnographic work, and aim to further codify principles that could guide this methodological innovation. To get this strategy, we focused on three methodological axes: life course perspective- trajectories analysis and cohort analysis. All these three developments (trajectories analysis, cohort analysis and life course perspective) are elements of a paradigm change in the social science toward the greater primacy of context, temporality, and process, in the studies of individuals, groups, and social organizations.

#### **147. How far have we progressed? Qualitative research in demography during the 21st century**

*Paula Miranda-Ribeiro, CEDEPLAR, Universidade Federal de Minas Gerais; Andrea Simao, PUC Minas and UFMG*

Despite its quantitative tradition, demography has become more aligned with qualitative research over the past 15 years. There has been a growing recognition that quantitative research offers little information about ideals, motivations, intentions, cultural aspects, and processes that surround demographic events. Therefore, many of the important questions relating to demography cannot be answered through the sole use of a quantitative approach. The objective of the paper is to investigate the production of qualitative research in demography during the 21st century. The analysis is based on the articles published in four major journals: Demography (USA), Demographic Research (Germany), Revista Brasileira de Estudos de População - REBEP (Brazil), and Revista Latinoamericana de Población- RELAP (Latin America and the Caribbean). We quantify each publication by number of papers, their authors and institutional affiliations, countries/regions under study, and qualitative techniques utilized, while also qualifying the findings by answering the following question: what have we learned from these qualitative studies that we would not have learned from quantitative data? Using content analysis, we investigate the papers published in all volumes of the journals between 2001 and 2013, except for RELAP, which was first published in 2007.

#### **148. Levels of deprivation in child wellbeing in East Africa**

*James Ciera, African Institute for Development Policy (AFIDEP)*

Child wellbeing has mostly been identified and measured using uni-dimensional approaches which overlook the multidimensional nature and severity of child deprivation. This study uses a multi-dimensional measure of child deprivation that enables comparison of levels in child deprivation across countries. The study uses DHS data and the focus is on four East Africa countries (Kenya, Tanzania, Rwanda and Uganda). Deprivation is assessed for three age groups (0-4, 5-14 and 15-16) using five dimensions: basic health, water and sanitation, nutrition, education, and social protection. Results at uni-dimensional level show that child protection and health dimensions have the highest deprivation level while nutrition and water/sanitation have the least deprivation level. Children aged 0-4 are least deprived while children aged 15-18 are the most deprived. Results at multi-dimensional level show that Rwanda has the least deprivation level while Uganda has the highest among the three age-groups. The findings demonstrate that child deprivation is high in the region and is a function of multiple health-related dimensions. In order to reduce deprivation, there is need to roll out complex (multi-dimension) intervention programs across the study countries.

#### **148. Entourage résidentiel de l'enfant : un indicateur utile aux politiques de protection de l'enfance**

*Sall Moustapha Gibigaye A., Centre de formation et de Recherche en Population ( CEFORP)*

Les politiques sociales et de protection de l'enfance visent à améliorer les conditions de vie des enfants les plus vulnérables. Beaucoup d'efforts sont développés pour lutter contre l'exploitation et les violences subies par les enfants. L'analyse de la situation de résidence des enfants dans les ménages peut contribuer à identifier des situations de vulnérabilité. Les enfants ne résidant pas avec leur parents biologiques, et encore plus ceux qui résident en dehors de la parenté sont susceptibles d'être en situation d'exploitation. Au Bénin, le confiage d'enfants est une pratique répandue et leur implication dans le travail est forte. Cette implication semble d'autant plus forte que l'enfant ne réside pas dans la parenté. Cette communication propose, à partir des données des quatre EDS, d'analyser la structure des ménages et d'étudier les situations de résidence des enfants afin de construire une typologie de résidence des enfants de moins de moins de 15ans selon qu'ils vivent avec un parent, les deux parents, une personne apparentée ou sans aucun lien de parenté. Cette dernière catégorie d'enfants qui sont souvent des travailleurs, peut être considérée comme privé de protection parentale. La prévalence de cette classe d'enfant est un indicateur des besoins prioritaires en matière de prévention

#### **148. Invisible adolescents: Pregnancy in women under age 15 in Mexico**

*Jorge Valencia, Ipas; Raffaella Schiavon, Ipas Mexico*

Teenage pregnancy has been an important issue of population politics in Mexico. Recent trends on fertility levels in Mexico have shown that the decline on fertility has been slower than expected. Moreover, trends on adolescent's fertility rates have shown no decline at all. Since 2008, Mexico has developed a new form of birth certificate. Its analysis allows us to see the reality of a group of women that has been invisible for demographic surveys: very young females under age of 15. Our results show a steady proportion of pregnancies among women aged 14 or below in the last 4 years that account for a little less than 1% of 2 million births per year. Moreover, this group of women is in more disadvantaged position than the rest of the adolescents (15-19) in terms of education and socioeconomic level. Interestingly, our results show no significant difference in terms of health indicators, such as characteristics of the product such as birth weight, gestational age, and type of birth and access to health services among others. Additional and more accurate policies are required to attend this age-specific group, traditionally ignored.

#### **148. Parcours de vie des adolescents et jeunes à Yaoundé : une analyse de séquences de vie**

*Mouté Nyokon Charles Emmanuel, Institut de formation et de Recherche Démographiques (IFORD); Gervais Beninguisse, Institut de formation et de Recherche Démographiques (IFORD); Crispin Mabika Mabika, Université de Kinshasa; Alice Noël Tchoumkeu Pendeme, Institut de formation et de Recherche Démographiques (IFORD)*

La présente étude porte sur les parcours de vie des adolescents et jeunes de 15-24 ans résidant dans la ville de Yaoundé en 2011. Au-delà de leurs événements démographiques, l'intérêt ici est de dresser en une étude une typologie qui décrit leur entrée en vie sexuelle, reproductive et matrimoniale. L'étude procède par une analyse classique de recherche des déterminants de l'appartenance à une des classes de la typologie déterminées. Les résultats obtenus indiquent que l'influence de l'environnement socioculturel, démographique et économique s'exerce sur les parcours de vie des adolescents et des jeunes au travers de l'influence de leurs caractéristiques individuelles. En effet, il s'avère que le parcours de vie des jeunes hommes de la cohorte 20-24 ans de niveau secondaire ou plus est dicté par un besoin économique contrairement à leurs homologues de sexe féminin dont les parcours sont respectivement influencés par la situation de résidence avec les parents biologiques, la région d'origine ou l'appartenance ethnique. Chez les

jeunes de niveau primaire, leurs parcours de vie sont déterminés seulement par la région d'origine ou l'appartenance ethnique. Cette étude permet de prendre en compte les interactions entre différentes composantes de la santé de la reproduction entre 15 et 24 ans.

## **150. THE IMPLEMENTATION OF PREFERENCES FOR MALE OFFSPRING**

*John Bongaarts, Population Council*

Over the past quarter century the sex ratio at birth (SRB) has risen above natural levels in a number of countries, mostly in Asia. This rise has been made possible by the increasing availability of safe, effective and inexpensive technologies to determine the sex of a fetus and to abort unwanted pregnancies in countries with son preferences. This paper documents levels and trends in the sex ratio at birth, in preferences for male offspring (using information on desired number of girls and boys) and in the implementation of these preferences. DHS surveys from 63 countries in Africa, Asia, and Latin America and for Indian states are the main source of data. A comparison of desired with actual SRBs finds large gaps in most populations, implying a substantial unmet need for sex selective abortion. Two types of preference implementation are considered: the use of contraception to stop childbearing after the desired number of sons has been born and the use of sex selective abortion to avoid female births. The second part of the paper discusses a range of factors that could raise or lower the SRB and their implications for future trends.

## **150. Mechanism on sex selection and childbearing behavior in Chinese families: A 2010 census based study**

*Shuzhuo Li, Xi'an Jiaotong University; Ying Hu, Xi'an Jiaotong University; Marcus W Feldman, Stanford University*

China's sex ratio at birth has decreased slowly since 2009. Investigation of household-level influences on the desired number and gender of the family's children can help produce more effective governance policies. A framework for analysis of families' sex selection and fertility behavior is proposed. Data from the 1% sample of the sixth census of China completed in 2011 are used to investigate factors influencing the reproductive behavior of Chinese families with ordinary logistic regression and multiple hierarchical logistic regression. It is found that the probability of having a son is correlated with the mother's personal characteristics, family structural variables, and marriage pattern. The parity of a son's birth is positively correlated with the number of daughters previously born and negatively correlated with the number of previously born sons. Increasing China's urbanization and industrialization is likely to have more influence on families' reproductive decision-making than simply increasing the GDP per capita.

## **150. "Bridging the GAP": The interplay between fertility transition and birth masculinity in India**

*Suddhasil Siddhanta, Gokhale Institute of Politics and Economics*

Despite impressive fertility decline and drastic increase in gender ratio (male to female), little attention has been given to understand the relationship between these two aspects of reproductive behavior of India. Using unit level data from three waves of Demographic Health Survey (National Family Health Survey), the present study tries to unfold the relationship between fertility pattern and birth masculinity. The analysis reveals that son preference is embedded in Indian family system as efficient family limitation behavior, though its manifestation varies with stages of fertility transition as well as its regional variations. Key words: birth masculinity, fertility, parity progression ratio, sex ratio at birth, latent variable model, bivariate LISA, etc.

JEL Classification: J13, J16, C12, C31, Z13, etc

### **150. Changes in female status and disappearing son-preference in Republic of Korea**

*hanna lee, Seoul National University; Youngtae Cho, Seoul National University*

In Republic of Korea, patriarchal family system has brought about imbalanced sex ratio at birth and it kept prevailed even in the mid-1990. However, sex ratio at birth steadily declined since the mid-1990 unlikely other Asian countries. Since imbalanced sex ratio at birth is caused by son preference, this study will examine the factors that might have influenced to the decline of son preference, with particular emphasis on the status of women in society and in household. Data collected from the Korea National Fertility and Family Health Surveys of 1994, 2003 and 2009 was used. The survey involved women who were aged 15-49 and ever-married. Dependent variable is women's opinion on "must have a son". Independent variables are the socioeconomic status of women such as education and occupation level, women's position in the household when it comes to decision-making and autonomy in the household. Logistic regression analysis indicates that the influence of married women's status in the society and household on son preference is varied in different years. In past, women who have lower status in society tend to have higher son preference. However, as the society kept developing, women's son preference is much more affected by women's status in household than societal factors.

### **151. Determinants of Male Participation in Reproductive Healthcare Services: A Cross-sectional Study**

*Md Shahjahan, Daffodil International University(DIU)*

This study investigated the role of men in some selected reproductive health issues, characterizing their involvement, including factors influencing their participation in reproductive healthcare. This study was conducted in the working areas of urban and rural implemented by NGOs. The study included 615 men. Bivariate analysis was performed between male's involvements as the dependent variable with several independent variables. Logistic regression analysis was applied to assess the effects of risk factors on the participation of men in reproductive health. The mean age of the respondents was 34 years. The current contraceptive-use rate was 63% among the men who attended the evening clinics. Results of bivariate analysis showed a significant association with education, occupation, income, access to media, and number of living children. The logistic regression analysis showed secondary to higher education level, number of living children, paid employment status, long marital duration, and access to media were important correlates of males' involvement in reproductive healthcare services. The results imply a greater integration of reproductive healthcare matters with the MDG and increasing perception of men through enrollment in various components of reproductive activities will produce synergistic effects.

### **151. Male involvement in Family Planning in the Philippines: Who are willing to undergo vasectomy and what are the reasons of those who are unwilling?**

*Jeofrey Bautista Abalos, Bureau of Labor and Employment Statistics*

Vasectomy is safe and effective form of male contraception. However, in the Philippines only one percent of Filipino men have undergone vasectomy although 16 percent of men in union are willing to undergo this procedure after they have reached their desired number of children. Using the 2003 Philippine National Demographic Health Survey (NDHS), this study seeks to identify the factors associated with the willingness of Filipino men in union to undergo vasectomy. Moreover, it will also investigate the various reasons why Filipino men would never consider getting vasectomised. Results show that men who live in urban areas and have higher number of children are more likely to be willing to undergo male sterilization. Reasons of Filipino men why they would never consider undergoing vasectomy are: bad for man's health (45%), less intrusive family planning method are available (23%), loss of manliness (15%) and loss of sexual function (12%). Filipino men who have lower levels of education and formally married are more likely to say that they

would never consider getting vasectomised because it is bad for man's health while the rich men are less likely to say that it will cause loss of their sexual function.

### **151. Promoting Gender Equity and Spousal Communication as a Strategy to Change Contraceptive-Related Attitudes and Behavior among Young Men in Rural India**

*Ajay K Singh, Population Council, India; Ravi Verma, Population Council*

This paper examines the impact of peer led intervention on challenging gender norms among young men. The analysis is based on the operations research (the Horizons program) which covered 1040 young men (18-29 years) from 28 villages from one of the northern states of India. Pre-Post intervention surveys, including measures of attitudes towards gender norms using the Gender Equitable Men (GEM) scale and other key HIV/STI risk outcome were used as evaluation tools. The study demonstrated that there was a significant decrease in supporting inequitable gender norms, there was an increase in condom use with marital and non-marital partners and reported less physical harassment. Majority of men who participated in the study showed considerable improvement in inter-spousal communication on various issues such as STI, HIV prevention and condom use, which clearly highlights the importance of interpersonal communication and reinforcing gender equity and HIV risk reduction messages at the community level.

### **151. Risky sexual behaviours of China's male migrants bachelors among male migrants in a context of male "marriage-squeeze": Results from an exploratory survey in urban Xi'an, China**

*Bo Yang, Xi'an Jiaotong University; Isabelle Attane, Institut National d'Études Démographiques (INED); Shuzhuo Li, Xi'an Jiaotong University; Xueyan Yang, Institute for Population and development Studies, Xi'an Jiaotong University*

Due to the growing shortage of women on the marriage market in China, male bachelorhood is becoming a new demographic concern. Although marriage remains in most cases the only socially acceptable setting for sexuality, the female shortage implies that marriage-squeezed male bachelors can only meet their sexual needs through means other than heterosexual marriage. Little information is currently available on the situation of these marriage-squeezed males in China, but some recent studies indicate, for instance, that there is a higher occurrence of masturbation and use of prostitution among them. In parallel, it has been stated that unsafe sexual behaviours, including commercial sex and unprotected sex, increase the risk of transmission of HIV and STIs. Therefore, such unsafe behaviours may have substantial implications for prevention of HIV and STIs in this population. This paper investigates the sexual behaviours of male migrant bachelors in Xi'an and focuses on the risk they face in their sexual intercourses during their migration experience. Their general situation and specific characteristics are described, as well as the influence factors behind these risky sexual behaviours.

### **152. The Incidence of Induced Abortion in Kenya**

*Shukri F Mohamed, African Population and Health Research Center (APHRC); Chimaraoke Izugbara, African Population and Health Research Center (APHRC); Ann Marie Moore, Guttmacher Institute; Elizabeth Kimani, African Population and Health Research Center (APHRC); Michael M. Mutua, African Population and Health Research Center (APHRC); Abdhahah K Ziraba, African Population and Health Research Center (APHRC); Carolyne Phyllis Egesa, African Population and Health Research Center (APHRC)*

As of 2010, Kenya has a new constitution in Kenya which allows access to safe abortion services under a broader set of circumstances than previously allowed. Yet operationalization and implementation are slow and controversial, and unsafe abortion continues to occur. This study aims to estimate the incidence of induced abortion in Kenya in 2012 using both retrospective

(n=328) and prospective (n=326) data from a nationally representative sample of health facilities. The annual incidence of induced abortion in Kenya was calculated using both the Abortion Incidence Estimation Methodology and the Prospective Data Capture method. An estimated 146 427 women were treated with post-abortion complications in Kenya in 2012. Unmet need remains high at 26% and wanted fertility (TFR of 3.4) remains higher than actual fertility (TFR of 4.6). As in other sub-Saharan African countries, unsafe abortion continues to be a major health concern for women in Kenya.

### **152. From acceptability to legalization: Gendered attitudes to abortion in West Africa**

*Rachel Scott, London School of Hygiene and Tropical Medicine (LSHTM); Nathalie Bajos, Institut National de la Santé et de la Recherche Médicale (INSERM); Agnès Guillaume, Centre Français sur la Population et le Développement (CEPED); Michele Ferrand, CNRS*

This paper presents part of the findings of a large scale qualitative study of practices and attitudes to contraception, unwanted pregnancy and abortion in Burkina Faso, Ghana and Senegal. Findings from interviews reveal that attitudes to abortion are not binary but complex and nuanced. Responses went far beyond religion, capturing a diverse range of views. Analysis of representations of abortion, including attitudes towards its medicalisation and legalization, revealed the ways in which individuals negotiate the relatively common occurrence of abortion and its associated dangers with its illegality and social unacceptability. Importantly, attitudes to abortion were not always consistent with personal experience. Representations of abortion, and the ways in which they were constructed, were shaped by gender roles and gender relations. These representations are therefore powerful revealers of social structures and gender relations, and also of changes within them. This is particularly relevant in a context of economic crisis in much of sub-Saharan Africa, and helps explain gender differences in attitudes to abortion, and the effects of education and generation. This study goes beyond previous research in this area in painting a diverse and complex picture of representations of abortion, from the perspectives of both men and women

### **152. The health system cost of post-abortion care in Rwanda**

*Michael Vlassoff, Guttmacher Institute; Sabine Musange Furere, School of Public Health National University of Rwanda; Ina Kalisa, School of Public Health National University of Rwanda*

Medical complications resulting from unsafe abortion constitute a serious economic burden for the health-care system in many developing countries. In Rwanda, little is known about induced abortion. However, a 2010 nationally representative study found that about 60,000 abortions occurred annually. Since the legal basis for abortion is highly restrictive in Rwanda, most of these abortions are unsafe, and contribute substantially to maternal morbidity and mortality levels. Our paper builds on the incidence study by documenting the cost of post-abortion care to the health system in Rwanda. Through a 2012 survey of 39 randomly selected health facilities we collected data on personnel inputs, overhead costs and capital costs as well as inputs of drugs, supplies and materials. The cost estimates provided by this study are the most complete available from any study done to date on this subject and are the first estimates of the cost of unsafe abortion in Rwanda.

### **152. The Economic Cost of Unsafe Abortion: A Study of Post-Abortion Care Patients in Uganda**

*Aparna Sundaram, Guttmacher Institute; Michael Vlassoff, Guttmacher Institute; Akinrinola Bankole, Guttmacher Institute; Leo Amanya, Independent Consultant; Tsuyoshi Onda, Guttmacher Institute; Charles Kiggundu, Mulago hospital; Florence Mirembe, Makerere College of Health Sciences*

Due to a large unmet need for modern contraception in Uganda, many women resort to abortion to meet their fertility goals. However, abortion in Uganda is legally restricted, making a majority of the abortions in the country clandestine and unsafe. Apart from the dangerous health consequences, unsafe abortions also take an economic toll on the women who resort to it. Not only do these women have to pay for the abortion, they also have to pay for the treatment of its complications, and remain out of productive employment for the duration of their ill-health. Using data from a primary survey in Uganda, we examine the nature of these consequences to women and their households. Preliminary results show that that 61% of the women in our sample obtained an induced abortion. About 72% of them were under age 30, with a quarter being under age 20. Over half the women came from rural areas and were socially and economically disadvantaged. As indicated by our initial results, we expect to find that the negative economic consequences will be the strongest for the poorest women, who are more likely to slip deeper into poverty because of it.

### **153. Urban Advantage or Urban Penalty?: Under-5 Mortality and Urbanization in Sub-Saharan Africa**

*Jamaica Corker, University of Pennsylvania*

Rapid urbanization rates in sub-Saharan Africa (SSA) have been accompanied by worsening urban child health outcomes and a narrowing of the region's historic under-5 urban survival advantage. I use DHS data from twelve SSA countries to investigate whether there is an aggregate change in this differential between 1995-2000 and 2005-2010. I find that the urban advantage persists, but that it is weakening. I then examine whether the diminishing urban advantage is uniform across urban areas and find it is not. The overall decrease in the mortality differential is due to slower improvements in survival rates in smaller urban areas compared to the largest cities or rural areas. These findings support the growing literature which finds that rapid urbanization in SSA poses the greatest risk to improvements in child survival the smaller cities most likely to see the greatest proportional growth in the coming decades.

### **153. Trends in child mortality in Kenya: does the urban advantage still hold?**

*Elizabeth Kimani, African Population and Health Research Center (APHRC); Jean Christophe Fotso, Concern Worldwide USA; Thaddaeus Egondi, APHRC; Benta A Abuya, African Population and Health Research Center (APHRC)*

There is yet a consensus on the effects of rapid urbanization on child health outcomes in sub-Saharan Africa. This study seeks to describe and compare trends in childhood mortality in Kenya between urban and rural areas using DHS data for 1993, 1998, 2003 and 2008/09. Infant, child and under five mortality rates by cohort and urban-rural residence and key determinants are estimated. Results show a narrowing gap in urban rural differentials in childhood mortality. Generally, childhood mortality has declined in both rural and urban areas, but the decline has been more rapid in rural areas. The narrowing gap may be attributed to the fact that most urban residents in Kenya now live in slum areas; with very poor living conditions including water and environmental sanitation, livelihoods and health services, hence the rate of decline in childhood mortality in urban areas does not match that in rural areas.

### **153. Factors associated with child health in urban areas of Bangladesh**

*M Sheikh Giashuddin, Jagannath University, Dhaka; Mohammad Kabir, Jahangirnagar University*

Bangladesh is one of the few developing countries that has been experiencing rapid urbanization. The paper examined the factors associated with infant mortality in urban area and health seeking behavior of the urban children. This study used data from the Bangladesh Urban and Health Survey 2006. Households' socioeconomic status was measured using principal component analysis. Both descriptive and logistic regression analyses were used to assess the infant mortality differential of slum and non-slum areas. Infant mortality was astonishingly higher among the slum dwellers than among non-slum dwellers. The rich-poor gap in infant mortality is also significant. The prevalence of acute respiratory infection among the slum and non-slum children within two weeks preceding the survey was 14.3 percent and 10.8 percent respectively. In slum communities, children were 27 percent less likely to be taken to health facilities for treatment than non-slum communities. Wealth, migration status and the mother's education are identified as important correlates of infant mortality. The findings of this study reveal that there are large differences in infant mortality rates between slum and non-slum urban areas. It will be difficult to achieve Millennium Development Goals if the government ignored the health care need of the urban poor.

### **153. Is socio-economic inequality in childhood undernutrition increasing in urban India?**

*Divya Kumari, International Institute for Population Sciences (IIPS)*

This paper examines the trends of socioeconomic inequality in childhood undernutrition in urban India using data from all three rounds of the National Family Health Survey conducted during 1992-2005. We analyzed the prevalence of underweight (weight-for-age) among children less than three years old. The socioeconomic predictors were: household wealth and maternal education. Principal component analysis was used to compute a separate wealth index for urban India for all three rounds of the survey. Descriptive statistics, concentration index, and pooled logistic regression technique was used to analyze the data. In general, the prevalence of underweight has declined constantly in urban India, but the current level is still high. Moreover, the decline was greater during 1992-98 than 1998-05. Socio-economic inequality in childhood undernutrition has either widened or stagnated over the study period. Result of pooled regression analysis suggests that decline in the prevalence of underweight was higher among children of the richest quintile compared to the poorest quintile, among most educated mothers compared to uneducated mothers in urban India during 1992-2005. The salient findings of this study call for separate program targeting the children of lower socio-economic groups of urban population.

### **154. A General Theory of Gender Preference for Children**

*Sung-Yong Lee, Kangnam University*

Previous studies of gender preference were usually based on a gender discrimination approach. This approach identifies son preference with gender preference, and the causes of gender preference explained most through parents' side. The primary purpose of this study is to provide an alternative theory of gender preference. For this study, the value of children (VOC) is defined at the macro level, based on the Coleman's Rational Choice Model. VOC consists of three elements- (1) the child capital, (2) the resources in which the child has interests but parents control, and (3) parent's power. The first element is related to the demand side of the value of children: the side of parents who determine the resources in which they have interests but children control. The second and third elements explain why children of a particular gender provide their parents with child capital and how parents ensure they will obtain that capital. If these three elements of the value of children tend to concentrate in children of a particular gender, then the value of children of that gender is assumed to be higher than that of the other gender. Also the value of children of a

particular gender is determined by the family strategy whereby individuals use their kin in the historical and cultural contexts of the society in which they live.

#### **154. Femme chef de ménage : un indicateur d'une féminisation de la pauvreté à Ouagadougou ?**

*Madeleine V. Wayack Pambe, ISSP/University of Ouagadougou*

La variable « femme chef de ménage » est un indicateur privilégié des rapports de genre dans les travaux démographiques en Afrique subsaharienne, mais les études sur les ménages dirigés par les femmes dans cette sous-région demeurent rares. Ceci fait souvent plaquer sur ces ménages, des constats réalisés dans d'autres environnements sociaux, telle une féminisation de la pauvreté due à la multiplication de ménages féminins. Basée sur les données du recensement général de la population de 2006, notre étude compare à Ouagadougou, les caractéristiques sociodémographiques et économiques des ménages dirigés par une femme avec celles des ménages dirigés par un homme. Les résultats montrent dans l'ensemble, des discriminations structurelles importantes des femmes en termes d'accès à l'éducation scolaire et à l'emploi comparativement aux hommes. Cependant, les différences à l'intérieur de la catégorie des ménages dirigées par une femme sont plus grandes que celles entre ce groupe et celui des ménages dirigés par un homme. La comparaison selon le niveau de vie du ménage ne montre pas de lien systématique entre la pauvreté d'un ménage et le sexe de la personne qui le dirige.

#### **154. Modeling Synergies between Women-centered Interventions and Family Planning**

*Scott Moreland, Futures Group*

This paper uses a modeling approach to answer the question: "to what extent can strategies that focus on women and girls benefit health and development outcomes, including child survival, maternal mortality, family planning, and general economic development?" An empirically-based model was developed that links women-centered program strategies to health and development outcomes. To develop the model statistical relationships were established between key indicators using international cross-section data. Inputs include indicators on women's education, family planning effort, women's empowerment and proximate fertility determinants. The human development Index (HDI) was used as a quality of life and development organizing framework for outcomes since it includes education, life expectancy and income per capita. Additional outputs include standard demographic variables as well as child survival and maternal health indicators. Results from Mali show that women-centered strategies have a positive impact on development and health outcomes. Similarly, family planning strategies have positive effects. When both strategies are implemented simultaneously synergies are realized and the gains

#### **154. Sampling Transgender Communities to Assess Healthcare Access and Develop Public Health Programs**

*Judith Bradford, Fenway Institute*

Most research on transgender healthcare is based on small, nonprobability samples. Since many transgender people are reluctant to participate in studies, a transgender task force and university research group worked together as full partners to assess provision of transgender health services in a southern US state. Online and paper questionnaires were used for a statewide health assessment. The hypothesis that sample characteristics and findings would vary by response mode was tested (N=350). 61% responded online; 39% completed paper forms. Modality differences in sociodemographics, geography, and public health indicators were explored, using SAS, sign. set at .05. Online respondents were significantly older, had higher incomes, were 4 times as likely to finish high school, 2-5 times more likely to have health insurance. Online responders were primarily Caucasian (85%); the paper sample was primarily racial/ethnic minorities (71%).

Public health indicators (substance abuse and mental health) did not vary by response mode; higher percentages of paper responders experienced sexual violence.

### **155. Consanguineous marriages and their effect on pregnancy outcomes in India**

*Shrikant Deshikendra Kuntla, International Institute for Population Sciences; Srinivas Goli, International Institute for Population Sciences (IIPS); T.V. Sekher, International Institute for Population Sciences (IIPS)*

This study investigates the association between the marriage among the blood relatives and the adverse pregnancy outcomes based on the data of married women from the nationally representative India Human Development Survey. The occurrence of consanguineous marriages is more predominant in the states of southern India and among the socioeconomically disadvantaged groups. The results of Cox proportional hazard regression model reveal that, the women in consanguineous union were more likely to have adverse pregnancy outcomes including stillbirths (RR=1.59, p-value < 0.01), abortions (RR = 3.03, p-value < 0.01), miscarriages (RR=1.94, p-value <0.01) and spontaneous miscarriages (RR=1.70, p-value < 0.01) than their counterparts in nonconsanguineous marriage. The consanguineous marriage emerges as a critical predictor of adverse pregnancy outcomes in India. In order to avoid wastage of pregnancy and related reproductive health problems in India, it is imperative to initiate awareness creation measures regarding the adverse effects of consanguineous marriage, particularly in those regions where it is still prevalent.

### **155. Contributions of pubertal timing and adolescent intimate relationships to trajectories of psychological distress: A cohort study**

*Chi Chiao, National Yang-Ming University; Yih Chiao, National Yang-Ming University*

Prior research on how pubertal timing is associated with adolescent psychological distress has remained inconclusive. At the same time, emerging research has begun its attention to the effects of romantic and sexual relationships on adolescent psychological well-being. Much empirical work examines either side of the story using western samples. Yet, a non-western society presents its distinct social and cultural context that may shape the aforementioned factors differently to adolescent distress development. This study seeks to uncover relative influences of pubertal timing versus sexual/romantic relationships on trajectories of psychological distress and aims to understand how gender differences play out in shaping these relationships in Taiwan. Using growth curve modeling based on the longitudinal surveys of Taiwan Youth Project (n=2,851), preliminary analyses suggest a non-linear trajectory of psychological distress between the ages of 15 and 22, with distress escalating ( $\beta=0.55$ ,  $p<0.001$ ) as matured before tapering off over time ( $\beta=-0.08$ ,  $p<0.001$ ). Early maturity, early sexual involvement, and female sex are at greater risks for distress onset. Further analyses will continue to explore gender differentials in adolescent romantic relationships and puzzle related family and social factors in these distress trajectories.

### **155. Effects of Sedentary Lifestyle and Dietary Habits on Body Mass Index Change among adult Women in India: Findings from a Follow up study**

*Praween Kumar Agrawal, Population Council*

We examined the effects of sedentary lifestyle and dietary factors on the change in Body Mass Index (BMI) in a follow up study of 325 women aged 15-49 years in Delhi, systematically selected from the 1998-99 NFHS-2 samples who were re-interviewed after four years in 2003. Information was collected on height, weight, dietary habits and sedentary lifestyle through face to face interviews. Multiple logistic regression analysis was used to estimate the odds ratios for BMI change, adjusting for various confounders. Overall, a 2 point increase in mean BMI was found among women in just 4 years (from 24.8 in 1999 to 26.8 in 2003). Every second normal BMI women, 2 in 5 overweight women and every fourth obese women experienced >2 point increase in

their mean BMI from 1999 to 2003. Highest weight gain was found in women with a normal BMI. High sedentary lifestyle (OR:2.63;95% CI:1.29-5.35) emerged as the main predictor of >2 point increase in mean BMI in the adjusted analysis but there was a weak evidence of association with the dietary covariates. Findings suggest a high sedentary lifestyle as determinant of weight gain among adult women in urban India which call for relevant behavioural change interventions.

#### **155. Four Decades of Educational Differences in Overweight and Obesity in the United States: Period and Cohort Patterns**

*Yan Yu, Australian National University*

Both body weight and educational attainment have risen dramatically. In most industrialized populations, more educated people are less heavy than the less educated, and these differences may have changed over time in some populations. Using the cross-sectional series of the National Health and Nutrition Examination Surveys, this paper describes the period and cohort patterns of educational differences in overweight and obesity among non-Hispanic whites and blacks in the United States from 1971 to 2010. As period and cohort factors captures influences at different stages of the life course, their comparison would help to better understand the link between education and body weight.

#### **156. Modeling Age-Specific Mortality for Countries with Generalized HIV Epidemics**

*David J. Sharrow, University of Washington; Samuel Clark, University of Washington; Adrian E. Raftery, University of Washington*

Population projections that forecast the future size and age-composition of a country are crucial tools for appropriately planning the future allocation of societal resources. A projection model for countries with generalized HIV epidemics should take into account the future trajectory of the epidemic given the severe effect a generalized epidemic can have on the mortality conditions and composition of a population. We present a model of age-specific mortality as a function of life expectancy, HIV prevalence, and anti-retroviral therapy coverage for the 39 countries of the world experiencing a generalized HIV epidemic. We perform an in-sample validation where results show slight errors for several mortality indicators. Combined with the outputs of existing epidemiological and demographic models, this model makes it possible to estimate future mortality profiles for countries with generalized HIV epidemics.

#### **156. The effects of changes in household wealth on HIV risk in Manicaland, Zimbabwe**

*Adrian Mylne, Imperial College London; Nadine Schur, Imperial College London; Phyllis Mushati, Biomedical Research and Training Institute, Harare, Zimbabwe; Albert Takaruza, Biomedical Research and Training Institute, Harare, Zimbabwe; Helen Ward, Imperial College London; Constance Nyamukapa, Biomedical Research & Training Institute & Imperial College London; Simon Gregson, Imperial College London*

We aim to analyse relationships and trends between socio-economic status and HIV infection rates while accounting for demographic and behavioural factors using data over several rounds of a large population-based cohort study in Manicaland, Zimbabwe, over the period 1998 to 2011. Socio-economic status will be estimated from summed asset ownership scores for sellable, non-sellable and all assets. Multilevel random-effects models will be used to analyse associations between wealth and HIV. Sexual behaviour data will be incorporated in the models to assess for a potential mediating role. Results will be compared over several study rounds to assess for trends and dynamics. Preliminary results showed that mean asset scores decreased between rounds, reflecting a shift from moderate to poorer absolute wealth. Whilst ownership of sellable assets declined, there was an increase in non-sellable assets over time. Asset scores varied by location and were highest (and rising) in towns and lowest (and falling) in subsistence farming areas. Concurrently, adult HIV prevalence dropped significantly from 22.4% to 16.2%. In men, we found

no significant associations between household wealth and HIV prevalence across all rounds. In women, multivariate analyses showed associations between greater poverty and higher HIV prevalence up to 2003-2005.

### **156. The Relationship between AIDS/TB Mortality and Migration in the Context of Other Causes of Death in Rural South Africa**

*Sulaimon Atolagbe Afolabi, University of the Witwatersrand; Philippe Bocquier, Université Catholique de Louvain; Kathleen Kahn, University of the Witwatersrand; Mark A Collinson, University of the Witwatersrand*

Studies have examined the AIDS/TB Mortality Consequence of Migration but ignored other causes. We recognise that migrants could die of causes that can preclude AIDS/TB. Therefore, this paper employs a competing risk technique developed by Gray and Fine to investigate how the relationship between migration and AIDS/TB has evolved between 1994 and 2009 in South Africa in the context of other diseases and how the relationship compares with that of migration and other causes of death

The results indicate a changing relationship between migration and AIDS/TB mortality at each period of analysis. Migrants have greater odds of dying of AIDS/TB compared to their non-migrants counterparts. However, the gap became narrow at the later period. It is shown also that migration affects all causes of death

While we expect migration to influence AIDS/TB epidemic the way it did (increasing then decreasing contribution due to the availability of ART at the population level) but what is probably much less expected was its role on "silent" NCDs and other causes.

### **156. Youth mortality due to HIV/AIDS in South Africa, 2006- 2009**

*Nicole De Wet, University of the Witwatersrand; Oluwaseyi Dolapo Somefun, University of Witwatersrand; Sasha AP Frade, CHAPS*

South Africa has one of the highest HIV/AIDS prevalence rates in the world. It is estimated that 5.38 million South Africans are living with HIV/AIDS (Statssa 2011). New infections among adults aged 15+ were reportedly 316,900 in 2011 (Statssa 2011). This paper examines South Africa's mortality due to HIV/AIDS among the youth (15- 34 years old). This age- group is of fundamental importance to the economic and social development of the country and the Integrated Youth Development Strategy of South Africa adds that "many challenges of youth development remain enormous"(NYDA 2012). One of these challenges is the impact of HIV/AIDS on mortality. Data from the national registry of deaths, collated by Stats SA, from 2006- 2009 is used. Life table techniques are employed to quantify and infer the impact of the disease on mortality. Results show by sex, that mortality due to this cause has also remained consistent over the period, with mortality due to HIV/AIDS being higher among females than males. Probability of dying from HIV/AIDS shows that over the period, fluctuations in likelihood of mortality have occurred, but for both males and females (of all age- groups) the chances of dying from this cause have increased in 2009.

### **157. Exploring long-term changes in fertility differentials by level of education: Review and discussion of research issues**

*Tomas Sobotka, Vienna Institute of demography; Eva Beaujouan, Wittgenstein Centre: Vienna Institute of Demography, Austrian Academy of Science; Karel Neels, Universiteit Antwerpen; Ronald R. Rindfuss, University of North Carolina at Chapel Hill; Zuzanna Brzozowska, Vienna Institute of demography*

During the course of the 20th century, higher education was almost universally linked to lower and later fertility levels among women.

This study aims to make a case for a global comparative research on completed fertility by cohort, sex, and level of education. We review the existing evidence and main theoretical perspectives, put together a variety of research questions, arguments and hypotheses, identify data to be used, and define future research agenda on the topic.

A broad focus on global cross-country perspective will facilitate research into institutional determinants of the observed education-fertility differentials. The question of global convergence or divergence in education-fertility differentials will play a prominent role in our research. We will systematically explore conditions leading to diminishing or persistent education-fertility differentials across cohorts, including the roles of different family policies, norms and values pertaining to reproduction and childcare, gender systems, family and partnership patterns. We will also analyse the gradients of male and female fertility by level of education and link our empirical findings with the existing theoretical perspectives. Finally, we will explore hypotheses linking aggregate cohort intentions earlier in life with eventually completed fertility.

### **157. Lowest low fertility in South Korea: Differentials by women's education and locality: 1980 - 2010**

*Minja Kim Choe, East-west Center; Hyung-seog Kim, Statistics Korea*

We will examine fertility differentials by women's education and locality in South Korea for the period 1985 - 2010 using 10% samples of 2000, 2005, and 2010 censuses. Using birth history reconstruction method and computing period parity progression ratios for each year from 1985 to 2010, our analyses will be able to examine patterns of fertility differentials by women's education in detail, in terms of marriage, progression to first birth, to second birth, to third and higher order births, as well as period fertility rates. The main research questions we try to answer are: (1) how did the fertility differentials by women's education change during the 1985 - 2010 period? (2) to what extent do population composition by education explain the province level fertility differentials in fertility? and (3) what are the implications of these differentials on population composition in the future?

### **157. Proximate determinants of African fertility transition – a 3-model analysis of 23 African countries**

*Clifford Obby Odimegwu, University of the Witwatersrand; Shakira Choonara, University of the Witwatersrand; Temitope Oluwaseyi Adeyoju, University of the Witwatersrand, South Africa*

Social scientists and demographers are proffering explanations for the emerging pattern of fertility transitions in sub-Saharan Africa. Using the traditional Bongaarts model, its extended version and Stover's refinement, we try to offer a more nuanced explanation of African fertility transitions. We used data from Demographic and Health Surveys of 23 sub-Saharan African countries to investigate the patterns and changes in fertility and proximate determinants within and between the countries. Particularly we compared the impact of proximate determinants on fertility at both pre-1994 and post-1994 fertility regimes. It is shown that in pre-1994 period, the traditional Bongaarts model was more useful to explaining fertility variations than in the post-1994 era. Results also show that in East and Southern Africa, Stover's version of proximate determinant model is more useful to explaining fertility changes than the original Bongaarts model. There are also various differentials identified. Theoretical, programme and policy implications of these findings are discussed.

### **157. The Educational Gradient of New Family Behaviors in Europe and the US.**

*Karel Neels, Universiteit Antwerpen; Brienna Perelli-Harris, University of Southampton*

The Second Demographic Transition posits that shifts in values have led to the postponement of marriage and childbearing, increases in cohabitation and increases in childbearing within cohabitation. It is not clear, however, whether these behaviors are practiced equally by all strata of

society. Here we employ harmonized union and reproductive histories from the United States and 14 countries in Europe to examine how family formation behaviors are practiced by different educational groups. We use hazard models to explore the educational gradient of 1) entrance into first co-residential union; 2) entrance into marriage versus unmarried cohabitation; and 3) entrance into parenthood. For those in a cohabiting union we specifically focus on the educational gradient of experiencing marriage, a separation or a nonmarital birth. First results suggest that in France, Norway, and Austria, although the more highly educated frequently enter unmarried cohabitation, they are less likely than the lower educated to stay in unmarried cohabitation when having children. The number of countries analyzed will be expanded to explore how the educational gradient of these new behaviors may or may not be similar across countries.

### **158. Blurred Differences: Childbearing within marriage and consensual union in Latin America, 1980-2010**

*Benoît Laplante, Institut National de la Recherche Scientifique (INRS); Teresa Castro Martin, Consejo Superior de Investigaciones Científicas (csic); Clara Cortina, Universitat Pompeu Fabra; Teresa Martin Garcia, Spanish Council for Scientific Research*

This paper compares the fertility patterns of consensual unions and marriages in 13 Latin American countries using census microdata from the three most recent census rounds and a methodological approach that combines the own-children method and Poisson regression. Results show that in all countries examined fertility is slightly higher within consensual unions than marriages. The largest difference can be observed among women aged 30 to 45. Once educational attainment and other socio-demographic compositional variables are controlled, differentials generally fade. The age pattern of fertility is also documented to be very similar in marital and consensual unions. According to these results, we can conclude that in Latin America, at least since the 1980s, women's childbearing patterns depend on their age and on their living in a conjugal relationship, but not on the legal nature of this relationship.

### **158. Has the declining age at marriage contributed to reverse fertility decline in Sri Lanka?**

*Weraduwege Indralal De Silva, University of Colombo; Nishanthi Perera, University Of Colombo, Sri Lanka*

In Sri Lanka, during the past century, the female age at marriage increased almost by seven years from 18.3 years in 1901 to 25.5 years in 1993. Since then age at marriage of females demonstrated a significant decline - to low as 23.6 years in 2006-07. Along with the decline among the females age at marriage of males also shows a decline. The main objective of this paper is to explore the impact of this unexpected decline in age at marriage of both sexes, particularly females, on fertility change and implications in Sri Lanka. The study analyses data primarily from the Population Censuses and the Demographic and Health Surveys (DHSs). The Bongaarts's Decomposition Technique has been applied to investigate the impact of age at marriage on fertility increase. The analysis found that proportion of women married has significantly impact on the increase of fertility in Sri Lanka during the period of 2000 and 2006-07. The paper further discusses the relevant policy implications by emphasizing the importance of improving the knowledge of contraceptive use among youth and effectively implementing the existing law relating to age at marriage.

### **158. Marriage Timing, Marriage Regime and Timing the First Birth in India**

*Kerry LD MacQuarrie, University of Washington*

The last several decades have seen a rise in female age at marriage in Asia. As age at marriage increases, prior research directs us to expect a shorter first marital birth interval. Empirical evidence largely bears this out. However, the relationship between increasing age at marriage and shorter first birth intervals is neither direct, monotonic, nor universal. The prevailing sociological

explanation proffered for this relationship invokes coital frequency and hints at a link to features of the marriage regime beyond marriage timing alone. Yet, social mechanisms relating the marriage regime to marriage timing or the first birth interval remain inadequately specified. This study adds to this body of knowledge by examining the influence of multiple factors characterizing the marriage regime (hypergamy, endogamy, marital choice, premarital practices) and gender context on the timing of the first marital birth. It uses IHDS data, a nationally representative survey of Indian households with detailed variables on marriage practices, fertility, and gender relations. An additive series of regression models analyses whether the inclusion of marriage regime and gender norm variables alters the observed relationship between marriage timing and the first birth interval and explains the variation across regions and population subgroups.

### **158. Union instability – how does it affect fertility? – the case of Sweden**

*Lotta Persson, Statistics Sweden; Johan Tollebrant, Statistics Sweden*

In Sweden, as in many other countries, the patterns of partnership formation and dissolution has changed substantially with a general trend towards less stable unions. This study aims to give insight about the development of childbearing caused by union instability. Stepfamily fertility is studied for the period 1970–2011. It is measured by studying how many children who at birth have half-siblings, and by studying how many women and men have children with more than one partner. The analysis is based on register data containing information on childbearing histories of all women and men in Sweden. The results show that the impact of stepfamily fertility has declined in the 2000s. In a logistic regression model the reasons for this decline is explored. The results of the regression models show that factors such as postponement of family formation, higher educational levels and increasing numbers of foreign born only partly can explain the downturn. Thus, there are also other explanations. One could be increasing gender equality.

### **159. A Global Assessment of Human Capital Mobility: The Role of non-OECD Destinations**

*Chris R Parsons, University Of Oxford; Frederic Docquier, Université catholique de Louvain; Caglar Ozden, World Bank*

The discourse concerning the mobility of human capital internationally typically evokes migratory patterns from poorer to relatively more wealthy countries and this focus is strongly reflected in the (brain drain) literature. This emphasis omits an important and as yet understudied aspect of the phenomena however, namely skill transfer to non-OECD and in particular, emerging nations. This paper contributes to the literature by first developing a new dataset of international bilateral migration stocks by gender and education level, which includes both OECD and non-OECD countries as destinations in 1990 and 2000. We then use pseudo-gravity model regressions to impute missing values where data are not available, such that we are able to provide, for the first time, a global assessment of human capital mobility. The comprehensiveness of the resulting matrices facilitates a more nuanced definition of emigration rates based on the concept of the natural labour force, which additionally considers both entries and exits of workers.

### **159. Issues in Skilled Migration: A Case study of Skilled Migration from India to Singapore**

*Seema Gaur, Government of India*

Falling fertility leading to population ageing is causing serious labour shortages in developed nations. Further, globalization, needs of knowledge economy and compulsion to maintain international competitiveness are fueling skilled migration. Question arises what role skilled migration can play in moderating effects of population ageing and maintaining competitiveness of knowledge economies as well as provide direct and indirect benefits to sending nations. This study explores these issues through quantitative and qualitative field data collected from Indian skilled professionals working in Singapore in various sectors. Importance of study lies in the fact that India skilled migrants play very a very important role in Singapore and to the best of knowledge of

researcher; this is the only study on them based on field data. The findings show that demographic constraint faced by Singapore and its need to attract foreign talent along with India's advantages in supplying cost effective globally competent manpower provides strong complementarities between two countries which are being exploited for mutual gain, particularly in a regional cooperation framework. Skilled Indian migrants are also contributing to home country through remittances, skills transfer, new technology and new ideas, and institutional development.

### **159. Sending country determinants of international student mobility**

*Mary M Kritz, Cornell University*

International student mobility has increased rapidly since 1975 but little attention has been given to why countries differ in their rates of outbound student mobility or whether policies are needed to monitor outflows and encourage students to return home after completing their studies abroad. That is the case even though brain loss is of growing concern to senders. While a handful of papers have looked at student mobility, they differ in their conclusions. A couple of studies have found that students go abroad to study to take advantage of work opportunities abroad upon study completion but others have found that they do so because they lack study opportunities at home. No research paper has looked at student flows to a large number of sending countries and multiple destinations. This paper takes on that task by examining country differences in outbound mobility rates and their correlates. Regression analysis is used to evaluate the relative importance of several structural characteristics of sending countries, including: tertiary training capacity and investments; demand for higher education; GDP per capita; colonial status, population size, and international ties, etc. Preliminary findings show that countries with greater tertiary supply have lower outbound mobility while with higher demand have increased student outflows.

### **159. Skilled migration to the United States: a multivariate analysis of the period 1980-2010**

*Adela Pellegrino, Universidad de La República de Uruguay; Julieta Bengochea, Universidad de la Republica; Martín Koolhaas, Universidad de la República & Instituto Nacional de Estadística; Victoria Prieto, Universidad de la Republica*

This paper presents the trends for skilled migration to the U.S. for the period 1980-2010 and discusses the driving forces of its evolution. First, we aim to describe the magnitude of this flow and the socio-demographic characteristics of skilled migrants, through the analysis of the immigrant stocks enumerated in the United States, making use of U.S. census data for the waves carried out between 1980 and 2000, as well as using the American Community Survey 2010. Second, we dig into the determinants of skilled migration to the U.S. through a multivariate analysis, accounting for the economic, political and social factors that explain this outflow from the countries of origin perspective (push factors). In this last case the focus is driven to the explanation of the changes observed in the intensity of migration along the last thirty years from a multivariate longitudinal approach.

### **160. A comparative analysis on attitude towards ageing of middle-aged adults in South Korea and Japan**

*Ji Yun Tark, Seoul National University; Youngtae Cho, Seoul National University; Tamashiro Hiko, Hokkaido University*

This study focuses on a comparative analysis of attitude towards ageing among people aged 40-59 living in Korea and Japan. The purpose of this study is to investigate whether people's perceptions on one's own future life vary in two countries. We also describe leading factors that make Korean and Japanese middle-aged adults more or less concerned about their ageing. The data for this study are collected from the 2010 Korea General Social Survey (KGSS) and Japanese General Social Survey (JGSS). Three scales of attitude towards ageing were examined as our dependent variables: anxiety about poor health, loss of life and financial independence. Our hypothesis was that

Koreans will have more negative attitude towards ageing due to relatively weak social welfare for the elderly compared to Japan and strong family ties which make the elderly dependent on their offspring. However, the findings show that Japanese middle-aged adults are significantly more concerned about their future life than Koreans. After adjusting for socioeconomic characteristics, the difference between two countries became even greater. This study will attempt to address this result as following socioeconomic aspects: characteristics of Korean and Japanese middle-age, different social perceptions on education level and living area (urban/rural) in Korea and Japan.

#### **160. Assessing the health state/disability score of the elderly in sub-Saharan Africa: An analysis using the Frontier method**

*Ousmane Faye, Consortium pour la Recherche Economique et Sociale - CRES*

This paper uses a parametric stochastic frontier approach (coming from the economic literature) to explore the impact of the occupational activities and the living conditions in the slums on the health performance among the adult population aged 50 and up. We measure the health performance using the disability scores from the WHO. In our estimation strategy, we first consider the WHODAS II – 12 items score and thereafter simultaneously analyze several dimensions of health state description (cognitive, mobility, pain and discomfort, sleep and affect, etc.). We use individual data from the WHO's Study on Global AGEing and Adult Health (SAGE) in partnership with the INDEPTH network. The SAGE-INDEPTH survey provides longitudinal data on ageing in various Demographic surveillance sites (DSS) in South Africa, Kenya, Tanzania, and Ghana. This survey collects information on the older persons' health profiles, economic activities, cares and supports provided and received, and a broad range of self-reported assessments of health and well-being.

#### **160. Positive Attitude and Wellbeing: A Life Cycle Analysis of Individual's Healthy and Happy Life Expectancy for Brazil and Mexico**

*Gilvan Guedes, Universidade Federal de Minas Gerais & Indiana University; Cristina Rodrigues, Universidade de Sao Paulo; Luisa Terra, Centro de Desenvolvimento e Planejamento Regional (CEDEPLAR)*

This paper investigates the relationship between positive attitude and the remaining time lived healthily and happily over individual's life cycle for Brazil and Mexico. Building on principles derived from theories of reasoned action and subjective norms, coupled with the multidimensional concept of attitude from Cacioppo & Berntson (1994), we estimate an empirical measure of multidimensional attitude based on three levels of perception: the self, the relations to social networks, and the surrounding environment. Our empirical measure of multidimensional attitude (estimated by means of GoM models) is then used to evaluate differences in healthy (HLE) and happy life expectancy (GLE) over the individual's life cycle (estimated by Sullivan Method) according to the degree of one's attitude. At last, we apply demographic decomposition techniques to estimate to what extent morbidity compression is happening in each country and how sensitive this trend is to attitudinal levels. Using the World Values Survey (Brazil 1997, 2006; Mexico 1996, 2005), we find evidence of a positive association between positive attitude and HLE and GLE, although the association is not linear over individual's life cycle for health. Brazilians experience higher proportion of time happy and in good health than Mexicans, regardless of attitudinal status.

#### **160. Prevalence and co-relates of depression among older people infected and affected with HIV in rural South Africa**

*Makandwe Nyirenda, Africa Centre for Health & Population Studies, University of Kwazulu Natal; Somnath Chatterji, World Health Organization (WHO); Portia Mutevedzi, Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa; Tamsen*

*Rochat, Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Somkhele, South Africa; Marie-Louise Newell, Centre for Paediatric Epidemiology and Biostatistics, UCL Institute of Child Health, London, UK.*

Depression in older people is of major public health concern. This study's aim is to examine levels and correlates of depression in HIV-infected and uninfected older people, and subsequent association with self-reported health status. Diagnosis of depression episode was generated based on module from Composite International Diagnostic Interview and the International Classification of Diseases 10th edition, diagnostic criteria for research (ICD 10–DCR). Data come from a cross-sectional study on older people aged 50+ in rural South Africa. Overall, 51.9% of participants were depressed. Depression was highest (66%, 95% CI 57-75) in participants who had experienced death of an adult child due to HIV-related cause within two years of interview, followed by ART-naive HIV-infected participants or on ART for  $\leq 3$  months (53%, 95% CI 44-63). Participants HIV-affected via an HIV-infected adult offspring had the lowest prevalence of depression (41%, 95% CI 32-51). Depressed participants had higher odds of poor health (aOR 3.28, 95% CI 2.11-5.10). We find distinct levels and patterns of depression by HIV status. But cannot establish causality from our data nor comment on the nuanced nature depression is related to being HIV-infected or HIV-affected in older people; necessitating further research to unravel this complex relationship.

### **161. Gender- and Ethnic-Specific Migration Responses to Economic Fluctuations and Political Upheaval in Kyrgyzstan**

*Victor Agadjanian, Arizona State University; Evgenia Gorina, Arizona State University*

Studies of the effects of economic fluctuations on migration typically focus on human capital factors such as education or skills. In many developing settings, however, both the economic and political power and opportunities are strongly conditioned by ethnic or regional divides, and therefore the impact of economic downturn or political upheaval may differ across those divides. Likewise, the effects of economic and political instability on migration may vary by gender. We use recent nationally representative survey data from Kyrgyzstan to examine ethnic- and gender-specific variations in internal migration experiences over a decade. Event-history models predicting yearly risks of migration detect no clear association of these risks with political instability but show a decrease in the risks in response to the strongest economic shock of the observation period. The results also point to considerable and instructive ethnic and gender differences in migration risks. These findings are interpreted within the context of complex intersections of politics, economy, and culture in this transitional post-Soviet setting.

### **161. The role of migration on poverty reduction in Indonesia: A quest on the migrants' welfare before and after migration**

*Hasnani Nani Rangkuti, Australia National University*

It is theoretically argued that there is a strong linkage between migration and poverty. Migration can be treated as an alternative to improve individuals' welfare and to minimize the risk of being prone to poverty. Many studies have found that migrants on the average better than non-migrants. However little is known to what extent that migration process can improve migrants' welfare and to avoided poverty. This study wants to shed lights on that issue.

The empirical findings reveal the amount of wage received after migration is higher compared to prior to migration. Health and educational attainment plays a crucial role in determining the amount of wage received. In addition, as it is expected, formal sector offer higher increase in wage than informal sector. In contrast, the effect of gender disparity on wage is gradually decreasing over the years. The greater wage received by migrants' worker after migration taken place has improved their welfare and put them far from poverty. The higher wage received by migrants' worker could be translating into the benefit from migration could be utilized to improved their

human capital investment. In addition, the wage surplus potentially can be used to assist new migrants.

### **161. Transformations démographiques et développement socio-spatial intégré au Maroc: Aspects, interventions et défis**

*Brahim Kidou, Laboratoire d'Etudes et Recherches GEAMD, F.L.S.H., Université Ibnou ZOHR, Agadir*

Cette communication présentera une étude sur l'évolution de la question démographique et son intégration dans le système de développement socio-spatial marocain. Au cours des cinq dernières décennies, la population marocaine a subi des changements démographiques notables suite à une dynamique distinguée par le recul de la croissance naturelle et l'intensité des mouvements migratoires internes. Ces transformations ont affecté le système de peuplement spatial, mais aussi le comportement procréateur et la structure démographique. Le ralentissement du rythme d'accroissement, l'augmentation des citadins, la baisse de fécondité et la croissance des tranches d'âge d'activité, constituent les aspects majeurs d'une transition démographique avancée. Toutefois, les disparités démo-spatiales et les problèmes sociaux, représentent des défis permanents empêchant un développement équitable. Ainsi, plusieurs politiques (démographique, régionalisation, aménagement du territoire), et différents programmes de développement, ont précédé à l'intégration de la variable démographique comme composante non-négligeable pour asseoir un développement socio-spatial équilibré. Cependant, ces politiques n'ont pas pu réduire les inégalités socio-spatiales. De ce fait, il est important d'évaluer ce bilan à la lumière des changements démographiques en cours.

### **161. Urban growth, poverty and sustainability in the Amazon region**

*Sandra Maria Fonseca da Costa, University of Vale do Paraiba; Leonardo Freire de Mello, Universidade do Vale do Paraíba*

Brazil has experienced an economic development and achieved in 2012 the sixth position in the World economy ranking. As a consequence of economic growth, the Federal Government has invested in social policies that attempt to mitigate extreme poverty in the country. Policies such as "Bolsa Família", "Light for All" and "PAC - Growth Acceleration Plan" were proposed to increase family income and infrastructure, especially in urban areas. However, several Brazilian cities, such as the Amazonian ones, which have grown since 1980 considering the Region an urbanized forest, reproduce structural problems. According to 2010 Census, the urban population in the region grew by 36.6% between 1980 and 1991, 30.3% between 1991 and 2000, and 18.8% from 2000 to 2010. In 2010, 93.3% of the Brazilian Amazon cities were considered small in terms of population (less than 50,000 inhabitants), and concentrated 39% of the total urban population of the region. In this sense, we intend to discuss in this paper the situation of urban space in the Brazilian Amazon in terms of infrastructure and socio-economic conditions, and the conditions of sustainability, using the city of Ponta de Pedras, located in Para State, as an example.

### **162. Ultimate fertility levels: a modified projection method for low fertility countries**

*Leontine Alkema, National University of Singapore; Adrian E. Raftery, University of Washington; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section)*

Recently, the United Nations Population Division adopted a new method for projecting total fertility (TF) for all countries. The new projection method was well received but raised discussion about the model assumption that in the long run, the TF will oscillate around the approximate replacement level of 2.1 for all countries. In this paper, we investigate a modified TF projection model, whereby the ultimate fertility levels are country-specific and estimated using a Bayesian hierarchical model. Expert opinion is incorporated into the model by setting the upper bound on

the ultimate fertility level to 2.1. Under the proposed model, ultimate fertility levels are smaller though within 0.25 child of the current UN projection for most low fertility countries, and 1.9 (80% projection interval 1.6-2.3) for countries that have not yet completed the fertility transition, compared to 2.1 (1.8-2.4) for the existing method.

### **162. Household and living arrangements projections at the sub-national level: an extended cohort-component approach**

*Yi Zeng, Duke University And Peking University; Kenneth Land, Duke University; Zhenglian Wang, Duke University; Danan Gu, United Nations*

This paper presents the core methodological ideas, empirical assessments and applications of extended cohort-component approach (known as ProFamy model) to simultaneously project households, living arrangements and population age structure/sizes at sub-national level. Comparisons of projections from 1990 to 2000 using this approach with census counts in 2000 for each of the 50 states and DC show that 68.0, 17.0, 11.2, and 3.8 percent of absolute percent errors are <3.0%, 3.0-4.99%, 5.0-9.99% and  $\geq$ 10.0%, respectively. Another analysis compares average forecast errors between extended cohort-component approach and still-widely-used classic headship-rate method, by projecting number-of-bedrooms-specific housing demands from 1990 to 2000 and then comparing with census counts in 2000 for each of the 50 states and DC. The results demonstrate that, as compared to extended cohort-component approach, headship-rate method produces substantially more serious forecast errors. Illustrative projections from 2000 to 2050 for each of the 50 states, DC, six counties of Southern-California, and Minneapolis-St. Paul Metropolitan Area are reported. Among many interesting outcomes of projections with medium, low and high bounds, the aging of American households over the next few decades across all states/areas is particularly striking. Finally, the

### **162. Simultaneous Modeling of Heterogeneous Subpopulations within one Framework**

*Christina Bohk, University of Rostock; Roland Rau, University of Rostock*

Demographic forecasting models simulate the likely future development of a population with assumptions in mortality, fertility, and migration. If demographic behavior is heterogeneous in a population, projection accuracy can be affected substantially. To overcome this problem, we propose a new general framework that can be used to disaggregate heterogeneous populations in as many homogeneous subpopulations as needed that can then be projected with separate assumptions in mortality and fertility. The advantage of our general framework is that subpopulations cannot only be constructed with typical characteristics like age and sex, but also with other characteristics like country of origin or level of education. We apply this general framework in projections for Germany up to 2050 in order to show the impact of expected demographic heterogeneity on projection outcome. In the first projection, we use the variables age and sex to construct subpopulations, and in the second and third projection, we add the variables migration status and reason to migrate. As expected, our preliminary results indicate that projection error accumulates over time, and that it is higher for the first than for the second projection. We also discuss how this general framework can be easily applied to conduct multiregional projections.

### **163. Everything goes to my children: the parental investment of middle-income families in Canada and the USA**

*Anne H. Gauthier, Netherlands Interdisciplinary Demographic Institute (NIDI)*

Parental investment into children has increased substantially in the past decades. Not only do today's parents devote more time to their children than in the past, but there is evidence that they also spend more money on their children. And while economists have explained this change as a

quantity-quality tradeoff, sociologists have explained it as being part of a new parenting ideology aimed at securing the future of their children in the context of an increasingly uncertain economy. In this paper, we use qualitative and quantitative data collected as part of the Families in the Middle project to examine the parental investment of middle-income parents in Canada and the USA. Our inquiry is two-fold: we first analyze the various ways in which parents invest in their children, the reasons that appear to motivate parents to invest in their children as well as their related constraints. Second, we examine the role of national context by comparing and contrasting the patterns of parental investment of Canadian and American families. Considering the large differences between these two countries in their public investment in children, we ask whether these contextual differences are associated with different levels and styles of private investment into children.

### **163. Direct paternal investment has benefits on multiple child outcomes, with different effects for sons and daughters.**

*Emily H. Emmott, University College London; Ruth Mace, University College London*

Father effects on child development in developed countries are still unclear, with inconsistent results often reported. Furthermore, whether these father effects vary depending on context is rarely explored. Previous studies have found that fathers tend to invest more if they are of higher socio-economic position, if the investment is in sons, and if mothers are also investing highly. If these investment patterns are derived from differences in the returns to their investment, we would expect that paternal investment may have greater benefits under these individual circumstances. Using the Avon Longitudinal Study of Parents and Children, we investigate the effect of direct paternal investment on children's height, educational attainment and behavioural difficulty whilst controlling for direct maternal investment levels. Furthermore, we test whether the effect of direct paternal investment differs depending on the father's education, sex of child and level of maternal investment. We find that direct paternal investment has a beneficial effect on all three outcomes, though the benefit only exists for girls in height, and the benefit is larger for boys than girls in academic achievement. In contrast, direct maternal investment is only beneficial against children's behavioural difficulty, and no context dependence was found.

### **163. Mothers' perceived HIV status, self-rated health, and children's schooling in rural Mozambique**

*Luciana Luz, Arizona State University; Victor Agadjanian, Arizona State University*

Women's HIV status has been shown to affect parental investments in children's education, but little research has addressed how this relationship is affected by changes in women's perceived health condition. Using data from a longitudinal survey conducted in southern Mozambique in 2009 and 2011, we study the role of mothers' self-rated health on the association between perceived HIV status and children's schooling. More specifically, we investigate how mother's perceived HIV status and their health assessment in 2009 and 2011 affect children's school enrollment and attendance. Results suggest that for mothers who think they are HIV positive, a change in their health status significantly affect children's school outcomes.

### **164. Experience of sexual harassment and coping strategies among students of the School of Nursing, University College Hospital, Ibadan, Nigeria**

*Oyedunni Sola Arulogun, University of Ibadan; Isaac Omotoso, University College Hospital, Ibadan*

This descriptive cross-sectional study documented the prevalence of sexual harassment (SH) among 250 consenting students of University College Hospital Ibadan's school of nursing using a pre-tested questionnaire. Descriptive statistics and Chi-square test were used to analyze the data at 5% level of significance. Mean age was  $23.0 \pm 4.1$  years, 78.8% were females and 91.2%

perceived SH to be common in the school. Fifty-eight percent of respondents (11.6% males, 46.4% females) had ever been sexually harassed. Main perpetrators of SH against females were male resident doctors (24.5%) and male patients (11.3%) while female colleagues (44.8%) and female patients (20.7%) were for males. Types of SH experienced were unwanted body contact (79.3%), breast contact (67.6%), enticement (45.5%), attempted rape (39.3%) and unwanted kiss (26.3%). Attending parties and mode of dressing were positively associated with experience of SH. Main coping strategies employed were reporting to school authority, ignoring the perpetrator, confrontation and breaking up the relationship. Sexual harassment is prevalent among the students studied with females more affected. Coping strategies adopted were adjudged ineffective. Institutional based interventions such as sensitization, capacity on coping strategy skills, legislation and policy reviews are needed

#### **164. Rapports sociaux de sexe au Bénin : une illustration à travers les manuels scolaires de mathématique au primaire ?**

*Sall Moustapha Gibigaye A., Centre de formation et de Recherche en Population ( CEFORP); Saturnine Michozounnou, Centre de formation et de Recherche en Population ( CEFORP); France Guerin-Pace, INED; Mouftaou Amadou Sanni, Centre de Formation et de Recherche en matière de Population (CEFORP)*

Résumé Parmi les droits de la personne proclamés et acceptés par la communauté mondiale, les rapports sociaux de sexe constituent des axes prioritaires au cœur des Objectifs du Millénaire pour le Développement. Le Bénin, à l'instar des autres pays de l'Afrique sub-saharienne met en œuvre des politiques pour améliorer les rapports sociaux de sexe. Les changements sociaux escomptés ne pourront véritablement et durablement prendre corps que lorsque l'éducation à la base prend en compte les éléments fondamentaux nécessaires à l'intégration des questions d'équité dans les manières de penser et d'agir. C'est à cet exercice que les concepteurs des nouveaux manuels scolaires de mathématique au primaire se sont attelés depuis 2004. Les nouveaux manuels de mathématique au primaire s'appuient-ils sur des préjugés classiques de genre ou mènent-ils aux nouveaux rapports de genre promus ? C'est l'une des préoccupations qui seront traitée dans cette communication grâce à un examen systématique des manuels de mathématiques en usage dans les classes du cours primaire au Bénin.

Mots clés : Manuel scolaire, rapports sociaux de sexe.

#### **164. Teachers Gender-Stereotypes Belief and Practices in the Post Primary Public Schools: A GEMS Study in the Mumbai**

*Prakash Chandra Mishra, Tata Institute of Social Sciences (TISS); Pranita Achyut, Icrw; Nandita Bhatla, Icrw; Ravi Verma, ICRW*

Role of teachers is particularly central in the school context: teachers bring their own ideas about gender to the classroom; they may treat students differently based on their own or the student's gender, communicate different expectations for students, assign chores based on sex, and monitor or discipline students differently. This study explores the gender-stereotyped beliefs and perception of secondary school teachers' in classroom practices. A total of 257 teachers' participated in this study conducted by International Center for Research on Women (ICRW), as a part of ongoing Gender Equity Movement in Schools (GEMS) Project. A self-administered questionnaire was used to generate responses from teachers on how gender-stereotypes are played out in their classroom practices. Results indicate that most of the teachers surveyed directly or indirectly promote gender-stereotypes. Data reveals that female teachers are more gender equitable than male teacher, regression result depict that female teachers are significantly 3.7 times more gender equitable than their counterpart male teacher. The study recommends that teacher's education curricula for both pre-service and in-service must be permeated with opportunities to acquire gender sensitivity knowledge, skills and develop attitudes in classroom layout.

#### **164. Understanding of Sexual Harassment among Year 6 and Year 12 Students in Jakarta, West Java, West Nusa Tenggara and South Sulawesi**

*Iwu Dwisetyani Utomo, Australian National University; Peter Francis McDonald, Australian National University; Anna Reimondos, The Australian National University; Ariane Utomo, Australian National University*

This paper is based from the 2011 Indonesian Gender and Reproductive Health Survey of Year 6 and Year 12 students, teachers and school principals (N=8972). The aim is to evaluate students' and teachers' understanding and reporting of sexual harassment. In Indonesia sexual harassment has started to be introduced in Year 5 in Sport and Healthy Living education. Our bivariate and logistic regression analysis showed female teachers were more likely to classify behaviour as sexual harassment comparing to male teachers. There are some provincial differences where teachers in South Sulawesi were the least likely to classify any behaviour as constituting sexual behaviour compared to teachers in other provinces. Teachers in religious schools were significantly more likely to classify behaviour such as being touched, touching in the genital area, being forced to touch another's genitals, forced to be naked, rape and being treated as a sexual object as sexual harassment compared to teachers in non-religious schools. Among students, if harassed, girls were more likely to report and take action compared to boys. Year 6 students were more likely to report harassment to parents, police or teachers and school principals while Year 12 students will handle the matter themselves.

#### **165. Accès à l'enseignement au Burkina Faso: Dix ans de Plan de l'Éducation de Base Souleyamane Ouedraogo, Institut National de La Statistique Et de La Démographie**

Promouvoir l'accès des pauvres aux services de l'éducation de base est l'un des principaux objectifs du plan décennal de développement de l'éducation de base 2001-2010. Trois ans après sa mise en œuvre, Il apparaît dès lors nécessaire d'apprécier la réalisation de cet objectif. Pour cela, on a analysé l'évolution des inégalités sociales devant l'école pour ces quinze dernières années en étudiant l'évolution du lien entre l'accès des enfants à l'enseignement et l'origine sociale de leur père et/ou de leur mère. L'analyse empirique aboutit aux conclusions suivantes :

Grâce à une très forte expansion de l'enseignement primaire depuis 1980, les inégalités d'accès à ce niveau se sont réduites entre groupes sociales. La brèche entre le niveau d'accès des filles et celui des garçons s'est résorbée également. Outre, à travers le projet de développement de l'enseignement post primaire (PEPP) adopté en 1995 visant à doter chaque département d'au moins une structure de premier cycle a contribué à diminuer les inégalités d'accès à ce palier selon l'origine sociale. Cependant, au fur et à mesure que l'on avance dans le système scolaire, le pourcentage des scolarisés en position d'enfants du chef de ménage décroît et cela ne permet pas l'étude du lien entre origine sociale et accès au niveau élevé de l'enseignement.

#### **165. A Comparative Overview of Mechanism of Educational Inequality in relation to Patterns of Educational Inequality – India, China and Indonesia**

*Divya Ramchand, National University of Singapore*

Much of the in-depth work done on educational access has focused on patterns of education inequality in a particular country. While this focus is necessary, a broader cross-national comparative analysis of results from in-depth national studies has the benefit of providing a deeper understanding into the intricate mechanisms of educational inequality. This paper reviews empirical evidence from intervention studies, in-depth field surveys, observational studies and results from qualitative survey findings in India, Indonesia and China with the aim of shedding light on mechanisms behind educational barriers, and comparing them to common patterns of inequality more commonly found in existing literature. Through this international comparison, I hope to understand if there is more to learn about eliminating barriers to education than merely

looking at patterns of inequality, and if there are potentially transferable solutions to ameliorable barriers. Differences in patterns and mechanisms of educational inequality would be just as meaningful as similar patterns but different mechanisms (and vice versa) of inequality across these countries in understanding the promotion of human capital acquisition in Asia.

**165. Credit Constraints and the Racial Gap in Post-Secondary Education in South Africa**

*David Lam, University of Michigan; Cally Ardington, University of Cape Town; Nicola Branson, University of Cape Town; Murray Leibbrandt, University of Cape Town*

This paper analyzes the impact of baseline household income and scholastic ability on post-secondary enrollment in South Africa. Using longitudinal data from the Cape Area Panel Study (CAPS), we analyze the large racial gaps in the proportion of high school graduates who enroll in university and other forms of post-secondary education. Our results indicate that baseline income and ability (measured by performance on the grade 12 matriculation exam) are strong predictors of post-secondary enrollment and statistically account for all of the black-white difference in enrollment. Controlling for parental education and baseline scholastic ability eliminates the estimated impact of household income on university enrollment, though it does not eliminate the impact of income on other forms of post-secondary enrollment. Two measures of short-term income variability do not have statistically significant effects on enrollment. The results suggest that credit constraints do not appear to be important in explaining university enrollment, arguably the most important determinant of later labor market earnings. Credit constraints may play a role in other types of post-secondary education, however, programs that we estimate to have large labor market returns.

**165. Gender Differentials in Inequality of Educational Opportunities in India: New Evidence from an Indian Youth Study**

*Abhishek Singh, International Institute for Population Sciences (IIPS); Ashish Singh, Azim Premji University; Saseendran Pallikadavath, University Of Portsmouth; Faujdar Ram, International Institute for Population Sciences (IIPS)*

Using data from the ‘Youth in India: Situation and Needs’ survey, this paper provides perhaps the first estimates of inequality of opportunity in schooling outcomes for males and females separately for India. The inequality of educational opportunity in completion of primary (and secondary) schooling among females is more than twice (and nearly twice) than that among males. Further, among females only 20% of total schooling opportunities needed for universal completion of secondary schooling are available and equitably distributed; a figure substantially lower than that for males (35%). We also find stark inter-state variations in gender-differential in inequality of educational opportunities.

**166. Are Latina Women Ambivalent About Pregnancies They are Using Contraception to Prevent? Evidence from the Border Contraceptive Access Study**

*Abigail R.A. Aiken, University of Texas at Austin; Joseph E Potter, University of Texas at Austin*

Trussell et al.’s provocative analysis of women’s classifications of contraceptive failures from the 1995 NSFG found inconsistent retrospective reporting of intentions and feelings. Looking to the 2006-2010 NSFG, we find that such incongruent reporting of happiness about pregnancies resulting from contraceptive failure is more prevalent among Latina women. Is this a function of ambivalence about avoiding pregnancy, retrospective bias, or a meaningful distinction between happiness and intention? Using prospective data from the Border Contraceptive Access Study, we shed new light on Trussell et al.’s apparent paradox. We find that incongruent happiness and intention, rather than constituting ambivalence, reflect distinct concepts for Latinas. Wanting no more pregnancies, and using contraception to implement such intentions is not incompatible with positive feelings about pregnancy, and such happiness may reflect cultural influence, and the

impact of pregnancy on relationship wellbeing. Retrospectively reported intentions show considerable bias, but the majority of retrospective happiness is consistent with prospective feelings, suggesting that happiness is not merely an artifact of retrospective reporting. Findings have implications for the meaning and measurement of unintended pregnancy in national surveys like NSFG and PRAMS.

**166. Intersection of fertility desires & FP use on childbearing behaviors: Longitudinal study from urban Uttar Pradesh, India**

*Ilene Speizer, University of North Carolina at Chapel Hill; Lisa Calhoun, University of North Carolina at Chapel Hill; Ranajit Sengupta, International Institute for Population Sciences (IIPS); Theresa Hoke, FHI360; Priya Priya Nanda, International Centre For Research On Women*

Unmet need for family planning (FP) is commonly used as an indicator of gaps in FP services. The measure of unmet need relies on women's reported fertility desires; previous research has demonstrated that fertility desires may be fluid and not firm. Our study uses recently collected longitudinal data from four cities in urban Uttar Pradesh India to examine whether women's fertility desires and contraceptive practices at baseline predict pregnancy/birth experience in the two-year follow-up period. We demonstrate that those women who at baseline reported a desire to stop childbearing or a desire to delay childbearing 2+ years and were using any method of FP were the least likely to have experienced a pregnancy/birth by two-year follow-up. Women who were non-users and wanted to delay or limit at baseline were significantly more likely to have had a pregnancy/birth in the two-year follow-up. Ninety percent of pregnancies/births over the follow-up period are considered "wanted then" suggesting post-hoc rationalization of pregnancies/births even among those women who reported a desire to delay or stop childbearing two years earlier. Non-users may be ambivalent about future childbearing and the timing of future births; these women may not have an unmet need for FP as typically defined.

**166. The Decline in Non-Numeric Desired Family Size: A Cross-Regional Analysis**

*Lauren Kate Bachan, Pennsylvania State University; Margaret Frye, University of California, Berkeley*

This paper examines changes over time in the proportion of women's non-numeric responses to questions about desired family size. Such responses have often been interpreted through the lens of classical demographic transition theory, as an indication that reproduction has not yet entered into the "calculus of conscious choice" (Coale 1973:65). Yet non-numeric desired family size has rarely been investigated in a cross-national framework, and never across time. Thus we know little about the processes underlying changes in these responses. This study uses over 15 years of DHS data from 36 countries representing three world regions. Taking a multi-level modeling approach, we use country- and individual-level factors to examine changes in the proportion of non-numeric desired family size. Preliminary results from county-level fixed effects pooled time series models suggest that increasing education and knowledge of family planning methods contributed to the world-wide decline in women's non-numeric desired family size.

**166. Rethinking African fertility: The state in, and of, the future sub-Saharan African fertility decline**

*Tom Moultrie, University of Cape Town; Ian Manfred Timaeus, London School of Hygiene and Tropical Medicine (LSHTM)*

Despite large differences in total fertility, there are strong similarities in the patterns of family building across sub-Saharan Africa. In this paper we argue that these patterns of family building and the persistence of high to medium-high fertility regimes across the region can be understood better if the institutional context in which African women's childbearing occurs is not neglected. In this paper, we argue that historical institutions affecting attitudes towards childbearing,

combined with contemporary social, political and economic uncertainty and institutional capriciousness, have inhibited the African fertility transition. Until these institutional dynamics are better understood and engaged with, Africa's fertility decline will remain slow.

### **167. Changing pattern of care seeking for abortion complications: Do poor Pakistani women have better options now?**

*Zakir Hussain Shah, Population Council; Zeba Ayesha Sathar, Population Council*

Background: In 2002, Pakistani women experienced 2.4 million unintended pregnancies; nearly 900,000 were terminated by induced abortion. Each year 200,000 women experience serious health complications in Pakistan due to unsafe abortions. This paper will use data from 2 national studies to analyze the changes in pattern of resort to PAC services over time. Methods: 2 cross sectional surveys conducted in 2002 & 2012. Face to face interviews conducted on a structured questionnaire with 154 & 102 health professionals (HPs) & service providers (SP) of 261 & 266 health facilities (HFs). The data is drawn from the HP's study. Results: The probability of receiving PAC has increased for women; more so for poor. Less % of HPs now thought that women would resort to doctors in government facilities for PAC compared to 2002. Difference is more pronounced for urban poor (79% v 91%) & rural poor (78% v 86%). Even for urban & rural non-poor the trend has shifted downwards (37% v 46% and 51% v 55%). More women would resort to doctor in private facilities except rural poor who would seek traditional service providers e.g. TBAs. Conclusions: There is shift in pattern of resort for seeking PAC from public to private SPs by HPs perspective. Rural poor women are resorting to less skilled SPs for PAC.

### **167. Estimating the costs of treating abortion complications and the costs of legal abortion services, Colombia, 2012.**

*Elena Prada, Guttmacher Institute; Fatima Juarez, El Colegio De Mexico; Isaac Maddow-Zimet, Guttmacher Institute*

Since 2006, in Colombia abortion is permitted under three limited circumstances. Nonetheless, many women still have limited access to legal abortion. Recent evidence shows that less than 1% of the 400,000 induced abortions in 2008 were legal. Moreover, evacuation by D&C is still the standard of care for abortion services and for treating abortion complications, rather than the WHO-recommended method of MVA. In addition, administrators of health care enterprises are claiming that legal abortion services are a cost burden to the health care system, with no evidence to support their claims. The aim of this study, the first of its kind in Colombia, is to document the comparative costs of a) legal abortion vs. the cost of treating complications due to unsafe abortion, and b) document the costs of using modern (MVA) vs. older (D&C) techniques. Findings will allow us to provide evidence to dispel erroneous allegations associated with the provision of legal abortions, to help remove barriers for accessing safe abortion services, to investigate the extent to which using a modern (MVA) vs. older (D&C) technique represents lower costs to the health system and to fill out the knowledge gaps to deal more directly with barriers to legal abortion services.

### **167. Medical Abortion Drug Dispensing Behavior Among Pharmacists in India**

*Tariq Mohd, Population Services International (PSI); Nayanjeet Chaudhury, Population Services International, India; Atul Kapoor, Population Services International (PSI)*

In India, abortion is legal under Medical termination of Pregnancy Act Since 1971. As per the evidence, around 9% of total maternal deaths are caused by unsafe abortion. Though Medical Abortion (MA) drugs are prescription-only-products, in reality, it is often obtained without doctor's prescription through pharmacists. The pharmacists often have limited knowledge of safe use of drugs that may result in complications. Population Services International's intervention on safe medical abortion aims at educating pharmacists to improve their knowledge and dispensing

practices related to MA drug regimen. Using Lot Quality Assurance Sampling method, a mystery client or simulated patient survey was conducted on MA drug Dispensing behaviour among 380 pharmacists. The study revealed that 55% of pharmacists recommended correct dose of MA drug and 45% pharmacists suggested correct route of administering MA drug, while only 25% of the pharmacists asked for doctor's prescription for dispensing MA drug. The findings also revealed that only 42% of the pharmacists behaved correctly on all three key indicators (asked for doctors' prescription, recommended correct dose and route for administration) pertaining to MA drug regimen. The study helped to identify the low performing areas for further attention by program managers.

### **167. Systematic Error in the Measurement of Unsafe Abortion Related Mortality: A Multiple Bias Analysis**

*Caitlin E Gerdts, University of California, San Francisco*

**Background:** Without accurate measurement we cannot effectively target programs to reduce the dangerous consequences of unsafe abortion. Here we undertook a multiple-bias analysis approach to quantify the effect of systematic error on abortion-related maternal mortality estimates and outline a simple framework for investigators interested in replicating a multiple-bias analysis in their own data. **Methods:** This analysis employed Monte-Carlo based, probabilistic, multiple bias-analysis techniques to evaluate the influence of selection bias and misclassification in three studies of abortion related mortality. The prior distributions chosen for selection bias and misclassification differed by study, but a common analysis plan was followed. **Results:** For each study, the proportion of abortion related deaths (median) increased significantly after multiple bias analysis. **Conclusions:** These findings have broad reaching implications for the way we understand the distribution of cause of maternal death. If, as our data suggest, abortion related deaths account for a larger proportion of maternal deaths than previously thought, these methods can be used to more accurately determine the range of potential burden of abortion related mortality, and can also be used to help target funds towards increasing access to family planning and safe abortion.

### **168. Epidemiological Transition in Urban Maharashtra: A Revisit**

*Rahul Rajendra Koli, International Institute for Population Sciences (IIPS); Srinivas Goli, International Institute for Population Sciences (IIPS); Hemkothang Lungdim, International Institute for Population Sciences (iips).*

Like other developing countries, India is undergoing rapid epidemiological transition as a result of its demographic, economic and social changes. India is moving from second to third stage of epidemiological transition. However, India is facing both double burdens of diseases that burden of communicable and non-communicable. Lack of accurate data on cause of deaths is a major hindrance to comprehensive assessment of epidemiological transition. The urban Maharashtra known to be the only state where the vital events registration is above 90%. The results are evident that Maharashtra is at third stage of epidemiological transition. Among all causes of death "Diseases of the Circulatory System" is ranked first from 1990 to 2006. For youth, the leading cause of death is "Injury and poisoning" for both males and females. In the adult groups, leading cause of death is "Infectious and parasitic disease". Among adult males the leading cause of death is "Infectious and parasitic disease" and among adult female it is "disease of circulatory system". For the old age group, "Disease of circulatory system is the leading cause of death in Urban Maharashtra for both males and females. This indicates that state is non-communicable diseases but the state is facing double burden of diseases.

### **168. The Social Determinants of Health: Globalization, Urbanization, and Overweight in the Southern African Development Community**

*Nyovani Madise, University of Southampton; Gobopamang Letamo, University of Botswana*

Africa is at the onset of the challenge of overweight and obesity especially in countries that are urbanizing and globalizing fast. Overweight status increases the risks of cardiovascular disease, hypertension, and diabetes mellitus. We use the Commission on Social Determinants of Health framework to study the confluence of urbanization and wealth and their links with overweight and obesity in the Southern African Development Community (SADC). The SADC has some of the highest rates of overnutrition among women. Recent DHS data were used to fit country-level multilevel models for women 15-49 years old. Pooled data were used to assess the influence of the country's socioeconomic context on patterns of overnutrition. The country results show that age, educational level, and ethnicity are associated with being overweight or obese. The interaction between place of residence and wealth status is significant and shows differences in the probability of being overweight or obese by wealth status but dependent on urban and rural residence. The socioeconomic context appears to influence patterns of overweight and obesity: differences between urban and rural residents narrow in wealthier countries but remain strong in poorer countries.

### **168. Identify Contribution of Diseases to Disability and Healthy Expectancy: Urban-Rural Disparities among Elderly Population in China**

*Haochen Wang, Peking University; he Chen, Peking University; Chao Guo, Institute of Population Research, Peking University; Gong Chen, Peking University; Xiaoying Zheng, Peking University*

As composite of mortality and morbidity, health expectancy has advantage over single indicators when exploring socioeconomic disparities in health. Although huge income gap between urban and rural residents has been reported in China, little research has been done in discussing the urban-rural disparities in health expectancy and the underlying causes. Based on 2006 China Disability Survey, this study used attribution tool to identify the causes of disability by individual diseases and employed Sullivan method to compute life expectancy lived with disability by diseases. Urban male have 4.08 years (female: 4.95 years) lived with disability while rural male have 4.72 years (female: 5.46 years) lived with disability. Leading diseases of presbycusis, cataract, cerebrovascular disease, osteoarthritis and unclassified injury accounted for different years of disability. Different diseases patterns of disability and health expectancy exist among urban and rural areas. Such an identification provides a support to Chinese policy for fighting against disability among elderly.

### **168. Urban-Rural Differences in Health Status among Older Population in India**

*Joemet Jose, International Institute for Population Sciences (IIPS); Kaushalendra Kumar, International Institute For Population Sciences (IIPS), Mumbai, India*

To successfully address the challenges of rapid population ageing, it is essential to have an understanding of health status. In this study, we describe regional variations in health status by assessing self-rated health and functional disability of older population in India. The study uses the data from the World Health Organization sponsored "Study on Global Ageing and Adult Health (SAGE-INDIA)" of 2007. This pioneering survey gathered information from 6560 persons (aged 50 years and over) from six Indian states. Analysis indicates that older population from urban areas is more likely to experience better health status and lower disability. Education plays a very crucial role in better health status and lower disability, irrespective of urban-rural differences. It also shows that higher years of education and better economic status of the households are positively related with better health condition and lower disability. Social security measures, including pensions and health insurance are crucial to ensure quality of life and well-being of older population in India.

## 169. Genus

*Graziella Caselli, Università di Roma - La Sapienza*

Focus and Scope GENUS is an online peer-reviewed - open access - Journal of Population Sciences published by the Sapienza University of Rome with the support of the Department of Statistical Sciences, Rome. GENUS has adopted an interdisciplinary approach to population studies. It publishes articles of “pure” demography and articles aiming to further a better knowledge of the interrelationship between demography and biological, social and economic phenomena, connected with the evolution of the population. Our editorial staff have a breadth of experience and are affiliated with a variety of academic and research institutions that reflect this interdisciplinary focus. These have spanned not only pure demography but also anthropology and anthropometric, sociology and psychology, biology and genetics. GENUS has always tried to promote open dialogue across cultural, ideological and at times theoretical walls in the attempt to understand the complexities underlying population issues. The journal publishes three issues a year, each covering a four-month period of January through April, May through September, October through December. Print copies “on demand” of GENUS are now available at a cost of 30 Euros each number (taxes and shipment costs included). For an IUSSP member the cost is a discounted 20 Euros.

## 170. Family structure, rural livelihoods and child health inequality in Tanzania

*David W Lawson, University College London; Monique Borgerhoff Mulder, University of California at Davis; Margherita E Ghiselli, University of Minnesota; Esther Ngadaya, National Institute for Medical Research, Muhimbili Medical Research Centre, Tanzania; Bernard Ngowi, National Institute of Medical Research, Muhimbili Medical Research Centre, Tanzania; Sayoki GM Mfinanga, National Institute for Medical Research, Muhimbili Medical Research Centre, Tanzania; Kari Hartwig, Walden University, USA; Susan James, Savannas Forever Tanzania*

International inequalities in child health are well documented by population scientists, with children growing up in rural settings in sub-Saharan Africa at the greatest risk of poor health outcomes. In contrast, the factors that determine inequalities in child health within developing rural communities that share similar levels of service provision remain poorly understood. Building on theory and previous research by anthropological and evolutionary demographers, we examine family structure (i.e. family size, polygynous marriage) and alternative rural livelihoods (i.e. farming, pastoralism, wage-labour) as determinants of child health across an ethnically diverse sample of 56 villages in northern Tanzania. Out of 3400 children, WHO standards classify 41% as stunted, 16% as underweight and 4% as wasted. Preliminary analyses confirm marked differences in child health by family structure and livelihood. Presented analyses will use multilevel modelling to determine the relative importance of these factors amid a broader set of socioeconomic and demographic determinants, and furthermore consider hypothesised interactions between family structure and household characteristics. Findings will be discussed with regard to the cultural and socioeconomic factors that determine observed patterns, along with potential policy implications.

## 170. On the Evolution of Intergenerational Transfers Among Adults

*C. Y. Cyrus Chu, Academia Sinica; Ronald D. Lee, University of California, Berkeley*

We explain how upward transfers from adult children to their elderly parents might evolve as an interrelated feature of a deepening intergenerational division of labor. Humans have a particularly long period of juvenile dependence requiring both food and care time provided mainly by younger and older adults. We suggest that the division of labor evolves to exploit comparative advantage between young and old adults in fertility, childcare and foraging. Eventually the evolving division of labor hits a corner when the grandmother's fertility reaches zero (menopause). Continuing, it may hit another corner when the grandmother's foraging time has been reduced to her subsistence

needs. Further specialization can occur only with food transfers to the grandmother, enabling her to reduce her foraging time to concentrate on additional childcare. We prove that this outcome can arise only after menopause has evolved. We describe the conditions necessary for both group selection (comparative steady state reproductive fitness) and individual selection (successful invasion by a mutation), and interpret these conditions in terms of comparative advantages.

### **170. Testing the Sensitivity of the Trivers-Willard Effect Using Different Status Measures**

*Sebastian Schnettler, University of Konstanz; Martin Kolk, Stockholm University*

Based on evolutionary theory, Trivers and Willard (TW) predicted that high-status parents display male-biased and low-status parents female-biased parental investment and sex ratios. In previous research we demonstrated that the TW effect does not show in parental gender preferences as expressed in differential fertility stopping (Kolk & Schnettler 2012) and likely also not in parental investment (Schnettler 2010). Research on the TW effect in sex ratios at birth remains mixed, however. Part of the reason for mixed results is that generally, the expected effect is small in human populations. Here we look at how sensitive the TW effect is to different status indicators and what role female employment status plays in mediating the TW effect. We use logistic regression on micro level data to examine the effect of socioeconomic status on the sex ratio at birth. We use individual data on births and individuals from Swedish administrative register data ( $N \approx 2\,000\,000$  births). A wide range of socioeconomic traits are analyzed including income, wealth, occupational class and educational level. Early analysis reveals an ambiguous pattern that is contrary to the Trivers-Willard effect.

### **170. Modelling conflicts of interest in reproductive decision-making**

*Cristina Moya, London School of Hygiene and Tropical Medicine (LSHTM); Kristin Snopkowski, London School of Hygiene And Tropical Medicine; Rebecca Sear, London School of Hygiene And Tropical Medicine*

It is a common assumption that men desire more children than women do in high fertility countries. Evolutionary demographers have tried to explain females' relatively lower desired fertility by invoking the larger costs faced by women, a woman's desire to invest more in each child, and a woman's certainty that her children are genetically related to her. There are known trade-offs between the quantity and quality of children, but no clear reason why women and men should experience these differently. Furthermore, in the simplest scenario, in the case of strict (i.e. life-long) monogamy, since a man's lifetime reproductive success is tied to that of his reproductive partner, both individuals should have the same optimal family size. In this paper we develop a theoretical framework for examining the circumstances under which we expect conflicts of interest between partnered men and women in their fitness-maximizing optimal number of offspring. Using evolutionary simulations and dynamic programming to model behaviour, we examine the effects of paternity uncertainty, reproductive senescence, and the ability to switch or acquire more partners on the extent to which women and men will have different optima regarding the numbers of offspring and the pace of reproduction.

### **179. Assessment of the Second Urban Primary Health Care Project in Bangladesh**

*Brian Chin, Asian Development Bank; Annie Chu, World Health Organization-Western Pacific Regional Office; Muhammad Ziaul Hoque, Urban Primary Health Care Services Delivery Project, Local Govt. Division, Ministry of LGRD&C, Bangladesh*

With rapid urbanization in recent decades and over 40 million people living in urban areas in Bangladesh in 2011, the country faces challenges in providing adequate health services for the burgeoning urban population. Given the need to improve basic health conditions and provision of health services in urban areas, especially for the poor, the Government of Bangladesh launched the first Urban Primary Health Care Project (UPHCP I) in 1998 and continued with a second phase

(UPHCP II) from 2005 to 2012. Provision of services is through contracted non-government organizations (NGOs) in partnership areas (PAs). Assessment of the evidence show that there have been interim achievements with UPHCP II, namely, improvements across several service quality indicators, increasing equity of maternal and child health service coverage for the poor, and decreased cost over time in some PAs. Most rankings of PA performance across health service quality, cost, and maternal and child health coverage are weakly correlated, with only a few PAs scoring in the top-ranked half across all indicators. However, service quality indicators, such as training of staff, functioning of equipment, availability of drugs, infection prevention, waste disposal, use of registers, and overall and waiting time satisfaction of non-poor patients, have improved over time.

### **179. Rural-urban differences in health worker motivation and quality care in health facilities in Ghana**

*Alhassan Kaba Robert, Noguchi memmorial institute for medical research, university of Ghana, Legon; Edward Nketiah-Amponsah, University of Ghana; Stephen Kwasi Opoku Duku, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon; Christine J. Fenenga, Amsterdam Institute for Global Health and Development (AIGHD) and University of Groningen*

Over 50% of the estimated 24 million Ghanaians live in rural areas but only 32.1% of the health sector workforce works in rural areas. Doctor patient ratio in a predominantly rural region is 1:18,257 compared to 1:4,099 in an urban region. These rural-urban inequities have contributed significantly to Ghana's slow progress in achieving the millennium development goals 4,5 and 6. This study was conducted in 64 clinics among 324 staff in 16 rural and urban districts. Objective was to ascertain rural-urban differences in health staff motivation and the implications on quality care in health facilities. Results showed significant differences in quality care performance of rural and urban facilities in terms of "staff training in resuscitative techniques", "orientation to job", and "safe use of medications". Staff in rural facilities were more de-motivate by poor water and electricity supply than those in urban facilities ( $p < 0.05$ ). Motivating staff along these identified gaps will help improve quality care and clients participation in the national health insurance scheme, which is experiencing enrolment and re-enrolment challenges because of poor service quality in accredited health facilities.

### **179. Urban health challenge through the capability lens: case studies in Accra and Bamako**

*Claudine Sauvain-Dugerdil, Université de Genève; Allan G. G Hill, Harvard School of Public Health; Nediarka Douptcheva, Harvard School of Public Health; Mathias Lerch, Institut d'études démographiques et du parcours de vie*

West Africa stands out as the region with some of the worst health and mortality indices. There are nonetheless sharp differentials in health and well-being by urban/rural residence, and individual characteristics such as education and age. Whereas some inequalities are structural in origin, there are, however, inequalities which have a more local origin, depending on household and family level factors that affect, for example, access to health services as well as life styles and behaviour. After a discussion of some concepts underlying the description of individual and population health states, we use two case studies based on several years of West African field work – women's health in Accra and the welfare of young people in Bamako – to illustrate how adoption of the capability framework can refine the analysis of unequal access to health. We apply the capability approach developed by Sen and colleagues to distinguish, inter alia, the role of the resources of the context (offer side) from inequalities of individual capacity to use them to improve their well being, due to social, family and individual characteristics. This framework seems especially promising to examine the complex determinants of urban health.

### **179. Urban Inequalities in antenatal care and facility birth for 33 countries: Evolution over time**

*Andrew "Amos" Channon, University of Southampton*

With the urban population increasing in both number and percentage, urban health inequalities has been rising up the research agenda. A crucial aspect of health, both for the MDGs and the post-2015 agenda, is maternal health. This paper looks at inequalities in the percentage receiving sufficient antenatal care and children born within a facility and assesses how these have changed over time. Countries which have been most successful in reducing inequalities while increasing the proportion of mothers with these services will be studied, and countries which have not succeeded in this way will also be assessed. Using 125 Demographic and Health Surveys from 33 countries, new measures of wealth were constructed using Principal Components Analysis, applying only to urban residents, based on the assets that the household owns. Wealth was used both as a continuous measure (factor score) and in quintiles. The difference and ratio between richest and poorest quintiles was calculated, while concentration indices calculated. Results indicated that countries were diverse in the evolution of inequality with some successfully reducing it and others showing an increase over time. Policies to improve maternal health should tackle inequalities, while still increasing the overall level of service use in the whole population.

### **180. The effect of early-life exposure to water-borne diseases on old-age mortality in the United States**

*Magdalena Maria Muszyńska, Warsaw School of Economics; Roland Rau, University of Rostock*

The aim of the proposed study is to investigate whether exposure in early life to water-borne infectious diseases leads to permanent scarring and increase in old-age mortality. Given exposure to infectious diseases during childhood and in-utero increases the risk of developing chronic conditions at the old age, then cohorts born in large cities before the water filtration system was widely implemented would also have higher mortality than cohorts born afterwards, or those born in rural areas. This applies in particular to black population as compared to the white one. Based on the data from Social Security Medicare Part B merged at Duke University with the Numerical Identification Files from the Social Security Administration, the proposed study would use the individual level information on exact place of birth. The method applied is preliminary a visual assessment of mortality surfaces presenting data where random noise was eliminated with two-dimensional P-spline smoothing methods and estimation of a series of Cox proportional hazard models. Result of a preliminary study demonstrate that cohorts born in Washington DC, Atlanta GA, Baltimore MA after the water purification was started on large scale had significantly lower mortality than cohorts born before this date, as compared to the total population of the country.

### **180. Effets possibles de la vitamine A postpartum et le rôle de l'éducation de la mère sur la survie des enfants au Bénin**

*Fortuné Sossa, Université de Montréal; Thomas K. LeGrand, Université de Montréal*

Les carences en vitamine A sont un problème important de santé publique dans les pays de l'Afrique de l'ouest et du centre. Toutefois, les travaux existants sont assez mitigés sur l'efficacité de la vitamine A administrée durant la période postnatale en lien avec la mortalité post néonatale et juvénile au point où la question se pose de savoir si la vitamine A postpartum a un effet significatif sur la survie des enfants. Nous utilisons les données de l'enquête démographique et de santé du Bénin pour évaluer l'impact de la vitamine A postpartum sur le risque de décès infanto-juvénile (<2 mois, 2-5 mois, 6-11 mois et 12-59 mois). Les résultats du modèle de survie de type exponentiel par morceaux à fragilité partagée montrent que la vitamine A post-partum semble significativement différencier la survie des enfants pendant la période 6-11 mois et juvénile, contrairement aux six premiers mois de vie de l'enfant où les différences de survie sont

statistiquement non significatives. Nous avons également observé un gain de survie plus élevé chez les enfants dont les mères n'ont aucun niveau d'éducation.

### **180. Impact of effective coverage of antenatal care on neonatal mortality in India**

*Yarlini Balarajan, United Nations Children's Fund (UNICEF)*

This paper examines the impact of antenatal care (ANC) on neonatal mortality using nationally representative data from India. For the first time, we apply the WHO Framework of effective coverage to measure health systems performance of ANC. We define effective coverage by creating an "Ideal" package of ANC consisting of 10 key interventions, and also define "Less Than Ideal" packages comprising different combinations of less than the 10 interventions. Using data from over 60,000 mother-child dyads from 1998/9 and 2005/6 National Family Health Surveys of India, we use multivariable logistic regression models to examine the association of ANC on neonatal mortality. We find that only 10.4% of Indian women received effective ANC. There is substantial socioeconomic variation, with a 10-fold difference in effective coverage between the richest and poorest wealth quintile. Effective coverage is significantly associated with a 51% reduction in the odds of neonatal mortality (OR: 0.49; 95% CI: 0.36-0.67). This "Ideal package is more protective against neonatal mortality than other "Less Than Ideal" packages. India's health system is not meeting the needs of pregnant women. Improving utilisation and delivery of the components of ANC to improve service quality, has important consequences for improving child health in India.

### **180. The Impact of Health Intervention and Programmes on Mortality - A Case of Early Age Mortality in Nepal**

*Yagya Bahadur Karki, Population, Health and Development (PHD) Group*

Neonatal mortality has declined slowly in Nepal. Between 2001 and 2011, post-neonatal (PNN) mortality fell by 50% (26 to 13), whereas the neonatal mortality was reduced by only 15% (39 to 33). During the last 5-year period (2006-2011) nationally neonatal mortality didn't decline while PNN declined by 13%. Hence, an increasing proportion of child deaths are now in the neonatal period; 61% of all deaths in children under 5 happen in the first month of life. Nepal Government with technical and financial support from the private sector, NGOs and External Development Partners has attempted to reduce neonatal mortality by implementing CB-NCP in 10 districts since 2009. Analysis of NDHS 2011 data shows that CB-NCP has worked as the newborn care practices have improved and neonatal mortality in intervention areas is about half (20 per 1000 live births) the level than that of the remaining areas (39) of Nepal although nationally no decline was observed in 2011 compared to 2006 (33). Scaling up of the CB-NCP to national level is suggested.

### **181. Les enfants face au climat conjugal de leurs parents – quels sont les effets des changements de composition du ménage ?**

*Didier Breton, Université de Strasbourg / Ined; Nicolas Cauchi-Duval, Université de Strasbourg*

Nombre d'études traitent des effets des ruptures des couples parentaux sur le bien-être des enfants, leur parcours scolaire, ou leur développement une fois adultes. Mais la séparation des parents résulte d'un processus dont l'impact sur le bien-être de l'enfant dépend également de la période antérieure à la séparation. Ainsi, une rupture « en paix » peut être moins néfaste pour le développement de l'enfant que le fait de passer son enfance au sein d'une famille dans laquelle le climat serait délétère. Or, en France, comme dans de nombreux pays européens, la très grande majorité des enfants naissent au sein d'un couple qui durera au moins toute leur enfance. On s'intéressera alors dans cette communication au bien-être de ces enfants, à travers l'évolution du climat conjugal des couples stables auquel ils appartiennent. Dès lors, puisque ce sont l'arrivée et la présence d'enfants qui affectent principalement l'entente des membres d'un couple, c'est plus particulièrement au lien qu'il existe entre les changements de composition du ménage des enfants

et leur bien-être qui nous intéressera. L'approche ici privilégiée permettra d'illustrer en quoi l'altération du climat conjugal dépend possiblement des changements de composition du ménage.

**181. Consequences of Marital Conflict and Divorce for Child Development in South Korea**  
*Hyun Sik Kim, Kyung Hee University*

Literature on effects of marital conflict and divorce on child development has long wondered 1) whether divorce followed by parents' marital conflict exerts distinguishable impacts on children and 2) whether marital conflict is more detrimental to involved children than divorce per se. We address these questions using the Korea Youth Panel Study-Elementary School Students that traced students from 4th grade in elementary schools in 2003 to 2nd grade in middle school in 2007. We will assess various domains of child development such as cognitive skills indexed by math and Korean test scores and non-cognitive traits such as self-reported depression and autonomy. For a more rigorous study, we will situate our analytical framework not only in regression analysis such as ordinary least squares and logit analysis but also in the counterfactual inference based on propensity scores and generalized propensity scores.

**181. Family Structure and Child Health in the UK: Pathways to Health**

*Lidia Panico, Institut National d'Études Démographiques (INED); Melanie Bartley, University College London; Yvonne Kelly, University of Essex; Anne McMunn, University College London; Amanda Sacker, University of Essex*

A large body of literature has shown marked differences in the average level of resources and the average level of child well-being across different family structures. The average level of resources will vary across different family types. Although studies examining cognitive, educational and behavioural outcomes are more numerous, there is some evidence of differentials in physical health. Most research on family structure and child outcomes has concentrated on describing differentials, or testing whether the association between family structure and child well being is "real". Less emphasis has been placed on understanding the underlying proximate processes that explain the link between family structure to child health. Using the British Millennium Cohort Study, we focus on explicitly mapping the possible proximate processes that link family structure to children's physical health. These analyses employ graphical chain models, a statistical technique that lends itself well to longitudinal data, to test these relationships.

**181. Educational Achievement and Family Structure: Time and Money, Period**

*Patrick Heuveline, University of California, Los Angeles*

Research in the U.S. has shown that children growing up in a two-parent household do better than those in single-parent household on a number of outcomes, educational in particular. Cross-national studies of educational achievement have also found that this finding applies to other Western nations. However, cross-national studies aimed at measuring educational outcomes in a comparative manner in a large number of countries have serious limitations with respect to the measurement of parental background. In particular, household income is poorly measured and the contribution of non-residential parents is ignored. In this paper, we show that even a very crude imputation method for assigning values to these key missing variables modifies the results in a significant way. Specifically, the effect of family structure on children's educational outcomes disappears after imputing values for household income and time spent with both parents.

## **182. Labour market activity, occupational change and return migration: evidence on Indians in the Gulf**

*Mathias Czaika, International Migration Institute -University of Oxford; Maria Villares-Varela, University Of Oxford*

This paper analyses the relationship between migration duration and occupational changes, using the case of Indian expatriates in the Gulf States. De jure, permanent migration to a Gulf state is almost impossible, leaving a (renewable) temporary work visa the only option available for Indian migrants. De facto, however, ‘temporary’ stay can last for years or even decades, and thus, questions about the factors influencing the timing of return become relevant. This analysis, based on two rounds of the Kerala Migration Survey (KMS 2008 and 2009), aims to deepen our understanding about the relationship between return migration, labour market activity and occupational change among Indian expatriates returning from the Gulf region. In particular, we investigate whether the length of stay in the Gulf depends on migrants’ occupational trajectories before, during, and after the migration experience. We find some significant effects of transitions in labour market activity on the length of stay abroad. In particular, the prospect of acquiring an occupation which entails upward social mobility (mainly in the public sector or self-employment) seems to be associated with a shorter stay in the Gulf states, whereas the prospect of post-return labour market drop-out significantly increases migration duration.

## **182. LA MIGRATION DE RETOUR AU MAROC: A propos d'une enquête**

*Mohamed Khachani, Association Marocaine d'Etudes et de Recherches sur les Migrations (AMERM)*

Le retour des migrants demeure une question importante qui suscite de nombreuses interrogations sur les conditions de réinstallation et les effets que le retour opère sur l’environnement entendu dans son sens micro et macro économique et dans sa dimension spatiale. Cette communication vise la présentation des conclusions d’une enquête récente au Nord du Maroc, connue pour être un grand foyer d’émigration. Il s’agit de soumettre au débat les processus sur la base desquels se développent les flux de retour.

Le rôle économique des retours se manifeste par des investissements dans différents secteurs. L’importance de ce rôle varie selon le type de retour : après un succès économique ou après un échec d’insertion. Afin de mieux affiner l’analyse, l’enquête a permis d’identifier les profils des migrants de retour qui transfèrent des fonds et qui investissent. Elle a permis également d’apprécier la situation économique à partir de certaines informations recueillies sur les diverses étapes de la migration et d’interpeller les migrants sur leur degré de satisfaction et éventuellement sur leur intention de ré-émigrer. Dans l’examen de toutes ces questions, des comparaisons avec d’autres enquêtes portant sur d’autres régions permettent d’apprécier les spécificités de la région de Tanger-Tétouan.

## **182. Gender Runs Through It: Displacement and Repatriation of Filipino Migrant Workers from Libya and Syria**

*Maruja Milagros Asis, Scalabrini Migration Centre, Philippines*

This paper deals with the displacement and repatriation of overseas Filipino workers (OFWs) from Libya and Syria in 2011 (the process is on-going in Syria as of this writing) in connection with the Arab Spring or Arab Awakening. The displacement was the second largest repatriation of OFWs after the Gulf War of 1990-91. The mostly male, highly skilled or professional and legal profile of migrants in Libya vs. the mostly female, domestic work and unauthorized status of migrants in Syria shaped the different displacement, repatriation and return migration experiences of Filipino workers. The situation of Filipino domestic workers in Syria presented (and continues to pose) challenges for the Philippine government. The experience highlighted the need to strengthen reintegration programs and to make room for crisis or emergency-driven return migration. Among

others, fostering dialogue and cooperation with destination countries would be crucial in ensuring the protection of migrants in crisis situations. Empirical support for the paper was based on a review of the literature, repatriation and reintegration policies and programs, and key informant with returnees, family members, and representatives of government agencies and local government units.

### **182. Should I stay or should I go? How Arab Spring and Economic Crisis affected return intentions?**

*Elena Ambrosetti, Università di Roma La Sapienza; Eralba Cela, Polytechnic University of Marche; Catharina Fokkema, Netherlands Interdisciplinary Demographic Institute (NIDI); Angela Paparusso, Sapienza University of Rome; Viviana Premazzi, Università degli Studi Di Milano*

This paper aims to explore the return migration intentions of first and second generations of Moroccans and Egyptians, taking into account the consequences of the Arab Spring and the current economic crisis for the aspiration to return to Egypt and Morocco: does those two factors have become an important factor in the ‘stay-or-return’ dilemma? And if so, do the changing circumstances in Italy, Morocco and Egypt either encourage or hinder a return? What is the impact of migrants’ integration and transnational ties on this decision? Are there striking differences between the first and second generation and between men and women? As alternative and competing hypotheses are possible regarding the relationships between return intentions, integration and transnationalism, the study will be explorative in nature; no specific hypotheses have been formulated beforehand. This paper benefits from some of the results of a broader project called “Transmediterraneans. North African Communities in Piedmont, between continuity and change” that FIERI is carrying out with the support of the Compagnia di San Paolo foundation. Qualitative face-to-face interviews were realized with Moroccan migrants living in the cities of Turin, Rome and Ancona and with Egyptian migrants living in the cities of Turin and Rome.

### **183. Quantifying policy tradeoffs to support aging populations**

*Warren Sanderson, SUNY Stony Brook; Sergei Scherbov, International Institute for Applied Systems Analysis (IIASA); Marija Mamolo, Vienna Institute of demography, Austrian Academy of Sciences*

Coping with aging populations is a challenge for most developed countries. The support of non-working adults can create an unsustainable burden on those working. One way of dealing with this is to raise the normal pension age, but this has proven to be unpopular. A complementary approach is to raise the average labor force participation rate. These policies are generally more politically palatable. We conceptualized and estimated, for the first time, the tradeoff between pension age and labor force participation rate policies and show that, in most European countries, a difference in policies that results in an increase in labor force participation rates by an additional one to two percentage points by 2050 can substitute for a one year increase in the normal pension age.

### **183. Labor Force Projections for India and China by Age, Sex, and Highest Level of Educational Attainment, 2010 to 2060**

*Elke Loichinger, Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/OeAW, WU), Vienna University of Economics and Business*

I provide labor force projections by age, sex and highest level of educational attainment until 2060 for India and China. This will allow to not only compare the development of the labor force in terms of size and age-structure, but to additionally make it possible to show changes in the educational distribution within the economically active population. This is of particular interest since for China, the absolute size of the labor force is projected to decline by 2030, and the

population is projected to age rapidly during the next decades. Some of the expected negative economic consequences of this development might possibly be compensated for by a more educated, more productive labor force. India, whose working-age population is not projected to decline, nor is its population aging as quickly, would still benefit greatly from a better educated labor force. It will be shown that depending on the assumed path of future educational expansion and of education-specific labor force participation, the labor force in both countries could develop along very different paths.

### **183. Population Ageing, Retirement Age Extension and Economic Growth in China**

*Xiujian Peng, Monash university*

China will experience a rapid population ageing. According to United Nation's medium variant population projection, the proportion of the old population aged 65 and over will increase dramatically from 8.2% in 2010 to 25.6% in 2050. Meanwhile the growth of the working age population will stop at around 2015 and turn strongly negative afterwards. Furthermore, China's low retirement age compounds the ageing problem. Currently the retirement age is 60 for men, 55 for female officials and 50 for female workers. To mitigate the negative effects of shrinking labour force on economic growth, it is essential that labour force participation among the current working age population is adequate. Raising the official retirement age is one of the strategies to encourage labour force participation.

This paper will apply the dynamic computable general equilibrium (CGE) modelling approach to simulate the effect of retirement age extension schemes on China's economic growth over the period 2010 to 2050. It will contribute to the hot debate about the retirement age extension and help policy formation in China by providing a quantitative indication of the extent to which the labour shortage can be relieved and the burden of supporting the elderly can be alleviated by increasing the retirement age.

### **183. Population aging, pensions and social protection: A macroeconomic examination of challenges**

*Michael Herrmann, United Nations Population Fund (UNFPA)*

Population growth and an increasingly youthful age structure have characterized the largest part of history; whereas the deceleration of population growth and an aging population are relatively recent phenomena. Experiences how countries are able to cope with, and address an aging population are relatively limited, and fear of an aging population and associated economic and social consequences are perhaps understandingly widespread. The fears of an aging population are by and large related to economic challenges. Will population aging negatively affect economic output and lead to deflation? Can they pay adequate pensions? Can they cope with rising health care expenditures? Will policy responses inevitably place a burden on the elderly or the younger generations? This paper argues that the fear of population aging is often based on a partial economic analysis, which focuses on the level of households, and that the challenges are considerably less daunting if viewed from a macroeconomic perspective. In most countries it the establishment of functioning pension systems and the provision of social protection is a question of political consensus rather than economic capacity. However, some countries, especially the world's least developed, confront t challenges.

### **184. How do Gender Preferences Affect Number of Children in a Family?**

*Jian Song, Center for Population and Development Studies, School of Sociology and Population Studies, Renmin University of China; Ye Tao, Renmin University of China*

According to Bongaarts low fertility model, gender preferences tend to help increase fertility rate. It is believed that when both children's gender and number are taken into account in family's

fertility plan and child-bearing behavior, couples would be very likely to bear more kids in attempt to achieve the ideal sex structure, even if their expectation for children in number has been met. Chinese people show very strong gender preferences especially for sons partly because of its agricultural-dominated life style, which has been indicated by many- years abnormal high sex ratio at birth. Meanwhile, China has seen its fertility rate dropped below replacement level since 1990s. How do gender preferences affect China's fertility level?

Based on national survey data, this paper explores the relationship between gender preferences and the number of children in China urban families. Results show gender preference does not necessarily mean male preference in contemporary China, but diversifies and no gender preference accounts for the highest percentage among urban married young people with children. Preference for both boys and girls will be likely to increase the number most, no preference to decrease the number most, and female preference tends to increase the number more than boy preference.

#### **184. Life Situations of Young Fathers in Greater Jakarta, Indonesia**

*Iwu Dwisetyani Utomo, Australian National University*

Very little is known about the fatherhood experiences of young men in Indonesia. This paper uses the 2010 Greater Jakarta Young Adults Survey to describe the lives of young fathers in Jakarta, Bekasi and Tangerang. Those aged between 20-34 years old were randomly selected. The study demonstrates how education determines parenthood status among men and women, and compares and contrasts the labour market experience of young fathers and mothers. This provides the background for a review of young parents' health and wellbeing, intergenerational economic transactions and their attitudes towards gender roles and children. Young adults in the Indonesian capital are delaying marriage and childbirth, but those who do become parents at an early age are likely to follow a male breadwinner model, with fathers holding less egalitarian attitudes towards gender roles than either their partners or males who are not fathers.

#### **184. Population and changes in Gender Inequalities in Latin America**

*Jose Eustaquio Diniz Alves, Brazilian Bureau of the Census; Suzana M Cavenaghi, National School of Statistical Science at The Brazilian Institution of Geography and Statistics - ENCE/IBGE; George Martine, Independent Consultant*

The Latin America and Caribbean (LAC) region has experienced a process of economic and social change that has enabled the reduction of the gender gap in some areas and reversed it in others. Demographic and urban transitions have enabled women to live longer and to have fewer children. They have surpassed men in education and reduced the gender gap in the labor market, although various forms of occupational segregation and wage discrimination remain. As elsewhere, the region has made advances in its epidemiological transition, but external causes of death have affected men much more than women, resulting in a growing surplus of women. Social achievements in the region have been reflected in higher levels of female participation in decision-making arenas, although parity is still far-off. The objective of this paper is to analyze recent reductions and reversals of the gender gap in the LAC region in the health, education, labor market and decision making arenas. This type of analysis is crucial for updating the debate on issues of gender and sustainable development, as set out in the ICPD Plan of Action (1994), Beijing Platform (1995), Millennium Development Goals (2000) and The future we want (Rio + 20, 2012).

#### **184. Women's autonomy, education and birth intervals: visiting the less familiar**

*Santosh Jatrana, Alfred Deakin Research Institute, Deakin University; Samba Siva Rao Pasupuleti, Alfred Deakin Research Institute*

Using data from the third National Family Health Survey (NFHS-3-2005-2006) on currently married fecund women with at least one child and Cox-proportional hazard models, this study

attempts to address the less familiar association between women's autonomy and birth-to-conception intervals (BI) in India. It also examines whether women's autonomy can explain much of the relationship between education and birth interval. Most research in this area has considered the association between women's autonomy and contraceptive use and lower fertility. In addition, while some researchers (e.g., Jejeebhoy, 1995) have suggested that women's autonomy may be a key pathway through which education influences fertility, others (e.g. Basu, 1996) have convincingly argued that there is still little quantitative evidence in support of the importance of women's autonomy as a mediating factor between education and fertility. Our results indicate that after adjusting for demographic, socioeconomic factors and use of contraceptive for spacing purpose, women's autonomy remained a significant predictor of birth-to-conception intervals with higher autonomy positively associated with larger birth-to-conception intervals. We also found highly significant interaction between women's autonomy and education of women in influencing birth intervals.

### **185. Exchange marriages between sibsets: A sibling connection beyond marriage, Québec 1660-1760**

*Marianne Caron, Université de Montréal; Lisa Dillon, Université de Montréal*

The aim of this paper is to explore transitions into marriage in the context of family during the 17th and 18th century in Québec. More precisely, we are interested in the occurrence of exchange marriages between sibsets. These marriages occur when two siblings from one family marry two siblings from another family. When two brothers marry two sisters, a parallel exchange marriage takes place, and when a brother and sister marry a brother and sister, a crossed exchange marriage occurs. Most research addressing this subject are qualitative and/or restricted to a community. For our study, we will explore this phenomenon at the national level of Québec, taking advantage of a quantitative life course approach. Which factors influence the hazard of being involved in an parallel or crossed exchange marriage? Are they individual characteristics, family dynamics and composition, or contextual factors? To explore these questions, we draw upon the *Registre de la population du Québec ancien (RPQA)*. This longitudinal database is based on parish registers linked with the family reconstitution methods, providing the opportunity to trace the life course paths of thousands of individuals. To describe the importance and the distribution of marriage exchange, constant and time-varying covariates are constructed, such as sibset size.

### **185. Demographic responses to colonization among indigenous populations: Migration and mortality in 19th century northernmost Sweden**

*Lotta Vikström, Umeå University; Glenn Sandström, Umeå University; Emil Marklund, Umeå University*

Although history shows how colonization has exposed indigenous populations to vulnerability, there is a narrow quantitative knowledge of how they demographically responded to colonization. Swedish parish registers are unique in providing longitudinal demographic data on the indigenous populations in past northernmost Sweden: the Sami. The Demographic Data Base, Umeå University, has digitized these registers, which allows this study to conduct event history analyses of the Sami's colonial experiences during the 19th century. If colonization added to the Sami's difficulties to maintain their traditional use of land and lifestyle, it would be indicated by (1) untimely death among them; (2) a desire to leave their space as it was increasingly colonized. However, the propensity to depart was significantly higher among the Non-Sami people, primarily settlers, probably because it was a tough task to establish a farm in these remote cold areas. Additionally, 'lock-in' mechanisms might have reduced the Sami's inclination to relocate, if this meant giving up a lifestyle and occupation difficult to perform in other settings. Their survival chances were higher than those of the Non-Sami, especially among women. In all, the findings propose that the Non-Sami individuals suffered from an 'unhealthy migrant effect'.

**185. The mad, the bad and the sad: life courses of convict women transported to Van Diemen's Land**

*Rebecca Kippen, University of Melbourne; Janet McCalman, University of Melbourne*

Around 12,000 of the 73,000 convicts transported to Tasmania, 1803-1853, were women. This paper reports on a study of a sample of 2,500 of these convicts. We investigate the backgrounds of these women before conviction, and trace them from transportation through to death. We find that many of the women, particularly the Irish, were without family or household and committed crimes of poverty in order to survive. We contrast the life courses and demographic characteristics—including mortality and fertility—of the transported women under and after sentence with those of women who remained in their place of origin. We find that many vulnerable women were wrecked by the convict system, debilitated by alcoholism and unable to successfully negotiate life in the colonies.

**185. La démographie de la RD Congo sous le régime du colonialisme mercantile belge, 1885-1940 :**

*Anatole Romaniuc, University Of Alberta*

Le discours colonial sur la situation démographique du Congo de l'époque fut dominé par le thème de la dépopulation que l'on avait tendance à attribuer à la surmortalité excessive suite à l'exploitation outrancière des autochtones dans des buts mercantiles, et aussi suite à l'introduction par les colonisateurs européens des nouvelles maladies qui étaient d'autant plus meurtrières que les autochtones manquaient d'immunité naturelle. C'est la version de la dépopulation d'Amérique post-colombienne. On peut cependant parler d'une version de dépopulation, typiquement «Africaine», celle-ci étant due à la dénatalité. Le Congo colonial offre un exemple démonstratif de dépopulation, due à la stérilité massive pathologique d'origine vénérienne. Dans certaines régions, surtout celles ayant souffert de l'esclavagisme Afro-arabe dans la deuxième moitié de XIXe siècle, 40 % des femmes n'avaient pas mis au monde un enfant né-vivant. Du point de vue de l'historiographie démographique coloniale, la présente étude est d'une portée générale, surpassant l'expérience du Congo. Elle met l'emphase sur le rôle, souvent ignoré dans les études démographiques, des maladies vénériennes dans les dépopulations, observées dans le monde.

**186. Age patterns of migration among Korean adults in the early 20th century**

*Bongoh Kye, Kookmin University; Heejin Park, Kyungpook National University*

In this study, we examined the age patterns of migration in Seoul in the early 20th century. Using the information on duration in the current residence available in the Seoul registers, we estimated age-specific migration rates and estimate migration life tables. The findings point to the followings. First, migration rates among the Seoul residents were pretty high. On average, the Seoul residents in this period are expected to change their residence more than 6 times during their primary working age (15-64). Second, the upper class was more mobile than the lower class. While the upper class would move more than 8 times between age 15 and 65, this number is amounts to less than 6 times among the lower class. This class differential can be explained by the frequent duty changes among the Korean bureaucrats in this period. The implications of findings are discussed.

**186. Demographic Responses to Economic Stress and Household Context in Three Northeastern Japanese Villages 1708-1870**

*Noriko Tsuya, Keio University; Satomi Kurosu, Reitaku University*

This study examines the demographic responses of men and women in preindustrial rural Japan to economic stress—both acute upheaval caused by large-scale famines and smaller-scale local

economic downturns—and to household context, using data drawn from the local household registers of three northeastern villages from 1708–1870. Modeling death and out-migration as competing risks, we compare two villages totally agricultural and one near a growing market town in their responses to acute stress caused by three widespread famines—the Horeki famine in the 1750s, the Tenmei famine in the 1780s, and the Tenpo famine in the 1830s—and to annual local economic fluctuations, simultaneously accounting for the effects of household context including landholding, coresident kin, and relationship to household head.

**186. Marriage, household formation and social mobility in colonial Taiwan: A new occupational database for Taiwanese family history.**

*Wen-shan Yang, Academia Sinica; Xingchen C.C. Lin, Institute of European and American Studies, Academia Sinica*

Taiwanese family history during the Japanese colonial time has been studied with various aspects. The relationship between marriage and social mobility is one of them and faced a technical perplexity for a long time. The occupational information was mixed trades and occupations on household registers. Moreover, the transformation between occupation and social class was simply divided into three classes in the past studies. In this paper, we utilize the information from household registers and Taiwanese Historical Information of Social Class and Occupations Database (THISCO) which is established based on LinShi Taiwan HuKou DiaoCha ZhiYe MingZiHui (臨時臺灣戶口調查職業名字彙, Collection of occupational titles from the 1905 Provisional Household Census of Taiwan) and referred to HISCO (Historical international classification of occupations) and HISCOM (World Historical Class Scheme). In this case, we can analyze the people behavior by individual and universal social class standard.

**186. ‘Escape’ in ‘Unfree’ East Asian Populations, 1700-1900**

*Hao Dong, Hong Kong University of Science and Technology; James Lee, Hong Kong University of Science and Technology; Satomi Kurosu, Reitaku University*

In the past, many people were ‘unfree’ in the sense that their movement was restricted, and out-migration without permission was recorded as an ‘escape’. This paper is one of the few attempts to study and compare such ‘escapes’. We currently employ two new panel datasets from historical household registers, including more than 1.7 million observations for around 400000 individuals living in Qing Liaodong and Chosun Tansong between 1700 -1900. (But similar data from Japan will be included into comparison before 2013.) In addition to measuring and comparing the rates of ‘escape’, this paper focuses on identifying important common patterns of behavior between the two ‘unfree’ populations and then on analyzing to what extent such behavior agrees with our understanding of the historical past and of human motivation more generally, taking advantage of discrete-time event-history approach. Our empirical analysis reveals that in both the Liaodong and Tansong historical registers the recording of ‘escape’ seems far more plausible than implausible. More importantly, it depicts a certain universality of human behavior.

**188. Collecting ethnic and racial data in censuses and surveys: Latin American experience. The cases of Brazil, Colombia, Mexico and Peru**

*Fernando Urrea-Giraldo, Universidad del Valle*

This paper aims to analyze the experience of four Latin-American countries with different traditions and methodological perspectives on the gathering of ethnic and racial statistics of black and indigenous populations, but also of white, mestizo and Asian populations, in particular after the significant appearance in the four societies of the multicultural ideology since the mid-eighties in the 20th century until today. The choosing of these four national societies to present the Latin American experience has to do with the particular interest in the different types of ethnic-racial statistics between the four societies, which allows to have a relevant view of these type of statistics

in the region, this is without saying that this is giving an account of all the countries in the region. Anyhow, we take the three societies with the major population volume in the region (Brazil, Mexico and Colombia) and with differentiated ethnic-racial patterns: Brazil has a tradition of statistics by skin color and according to the 2010 census it shows that more than half of its population self-recognized as black under two historical categories (preta and parda). On the contrary, the other three countries have built their statistics under the ethnic paradigm of the indigenous groups.

**188. Comment mesurer l'appartenance religieuse et son influence sur les comportements démographiques ? Une évaluation à partir de données longitudinales en milieu rural malien.**  
*Aurélien Dasre, Institut National d'Études Démographiques (INED); Véronique Hertrich, Institut National d'Études Démographiques (INED)*

L'influence de la religion sur les comportements individuels est généralement évaluée en fonction de la déclaration recueillie au moment de l'enquête ou du recensement. On considère ainsi implicitement que l'appartenance religieuse est unique, définitive et sans ambiguïté. Cette perspective s'avère cependant discutable dans des populations où différentes religions coexistent sans exclusive, comme souvent en Afrique subsaharienne. Quand il est fréquent qu'un individu change de religion au cours de sa vie, quand le syncrétisme est courant, peut-on alors espérer capturer de manière satisfaisante l'influence de la religion sur les comportements individuels à partir d'une variable du moment ? L'effet souvent mineur attribué à la variable « religion » pourrait-il résulter des limites de cet enregistrement ? Pour traiter ces questions, nous utilisons les données longitudinales d'un suivi longitudinal au Mali, ayant donné lieu à l'enregistrement détaillé des itinéraires religieux. Nous évaluons la pertinence de la variable classique sur la religion à l'enquête d'une part au regard de différents indicateurs d'adhésion et de mobilité religieuse, et d'autre part en comparant les différentiels de comportements en matière de prise en charge des enfants et de comportements matrimoniaux, selon le critère d'appartenance religieuse adopté.

**188. Fertility Dynamics in Israel and the West Bank: Accounting for Individual and Group Level Effects**

*Anaïs Simard-Gendron, University of Montreal; Simona Bignami, Université de Montréal*

This paper explores the fertility dynamics of the Jewish settlers living in the West Bank. Very little is known about this Israeli subgroup aside from their very high fertility and that they are told to be more religious and nationalist than their counterparts in Israel. The factors behind their fertility dynamics are analyzed with a multilevel hierarchical linear model (HLM) to disentangle the individual and group level effects that come into play. The data is broken down by religion (Jews vs. Muslims) to put forward the role of religion in the explanation of fertility behavior and by region (Israel vs. the West Bank) to account for the minority-group status. We argue that the fertility dynamics of the settlers in the West Bank are more similar to that of the Palestinians living in Israel because they both are minority-groups. The high fertility of the Jewish settlers and of the Palestinians living in the Occupied Palestinian Territories is also partially due to the permanent state of belligerence.

**188. Societal turbulence and demographic response in Central Asia: Ethnic-specific fertility trends in Kyrgyzstan**

*Lesia Nedoluzhko, Stockholm University; Victor Agadjanian, Arizona State University*

In our study we employ event-history analysis to estimate period indexes of first- and higher-order births in Kyrgyzstan – one of the former Soviet Republics in Central Asia. We differentiate between five periods in the history of contemporary Kyrgyzstan characterized by economic and/or socio-political instability to analyze fertility dynamics in that country. We use retrospective survey data collected in 2011/12. The objective of the study is twofold: to trace overall fertility trends in

the volatile socio-economic context and to examine ethnic variations in these trends as reflecting ethnic differences in both the stage of the demographic transition and in the economic and political positioning of various ethnic groups.

### **189. Fertility increase in Central Asia: Why, how?**

*Thomas Spoorenberg, United Nations Population Division*

After a swift decline during the 1990s related to the collapse of the Soviet Union, fertility has been stagnating and/or increasing in all countries of Central Asia. So far, this issue has not been the subject of strong interest from demographers. In this study, I investigate different hypotheses contributing to understand better the recent changes in the region: data artifacts (improvement in vital registration (VR) system), population composition effect, and economic context. The comparison of fertility data from the VR with other estimates from other data sources and/or estimation methods gives confidence that the recent changes are real and that the data artifact hypothesis can be ruled out. The most plausible explanations are to be found in the population composition effect and the economic context. As fertility patterns differ between ethnic groups, the out-migration of large portions of specific ethnic groups influences ultimately the course of fertility at the country level. Further, the effect of the diverse economic fortunes among Central Asian countries is as well considered as a possible factor contributing to the recent fertility trends in the region.

### **189. Fertility Transition, Convergence and Low Fertility Clubs, and Factors Associated with Low and Lowest-Low Fertility in India**

*Srinivas Goli, International Institute for Population Sciences (IIPS)*

This study investigates the fertility transition and convergence, and emerging patterns. Change-Point analyses indicate that the fertility in India observed multiple critical change-points. Considerable variation observed across the states in terms of initiation of transition and critical change points. Beta and Sigma convergence analyses indicate divergence in fertility rates across the states until 2000, divergence replaced with convergence for recent period. Convergence and low fertility clubs such as south Indian club, higher socioeconomic groups and non-slum urban areas are identified by introducing regional and socioeconomic group dummies into conditional Barro-Regression model. The factors associated with low and lowest-low fertility in India are identified by regression analyses. The higher education of women, greater mean age at first birth, breastfeed above 24 months, using any method of contraception, unmet need for limiting are emerged as a critical factors of low fertility while along with higher education, age at first birth above 30 years, couple desire to limit child bearing (after having only 1 living child), sex preference for both men and women become critical predictors of the women for lowest low fertility.

### **189. Toward replacement level : unexpected recent changes in Maghrebian fertility**

*Jacques Vallin, Institut National d'Études Démographiques (INED); Zahia Ouadah-Bedidi, University Paris Diderot (URMIS) /Institut National d'Études Démographiques (INED)*

After converging towards replacement level, fertility in the Maghreb is now following contrasting trends. In Tunisia, the total fertility rate (TFR) has levelled off and remained stable at 2.1 children per woman since 1999. In Algeria, after dipping to 2.2 in the early 2000s, fertility has increased steadily, reaching almost 2.9 in 2010. In Morocco and Libya, meanwhile, where fertility was still above replacement in 2000, the TFR has continued its rapid decline, down to 2.2 and 2.5 children per woman, respectively. Not only has fertility remained above replacement level in all of these countries, but Algeria has even seen a sharp upturn in the last decade, As in the past for fertility decline, the change in age at marriage is now the key factor behind the stabilization at 2 children per woman in Tunisia and in the increase to almost 3 in Algeria. Has the two-child model lost its

appeal in the latter country or changes in marriage tempo matters only? All available data from vital statistics, censuses and surveys will be used to try answering the question.

### **189. Work and Family Conflict, Gender and Low Fertility in Brazil**

*Helena Cruz Castanheira, UPENN; Hans-Peter Kohler, University of Pennsylvania*

This study uses a multilevel logistic analysis to measure in what extent work and family conflict and gender relations at the municipality level are associated with the odds to have a child at the individual level in different parities, controlled by age and socio-economic characteristics. We analyze only married or cohabiting women (in an attempt to capture only intended fertility) from 15 to 49 years old. We observe that the work and family conflict variable affects negatively the first birth order, and positively the second and third in 2010 when Brazil had below replacement fertility. It has no effect in births of fourth order. In 2000 this variable was mostly not significant in any birth order. An interesting relation was found between the work and family variable and type of labor contract. The variable used to measure gender relations in the county level had no effect in 2000 and 2010.

### **190. The impact of contraceptive failure on unintended births and induced abortions**

*Sarah E.K. Bradley, University of California Berkeley; Trevor Croft, MEASURE DHS, ICF International; Shea Oscar Rutstein, ICF International, Inc.*

Using data from 20 recent Demographic and Health Surveys (DHS), we estimate 1) the impact of contraceptive failure on unintended births and induced abortions, and 2) levels of unintended births and induced abortions that could be achieved if current family planning users adopted more effective contraceptive methods. We use multiple-decrement life tables to calculate contraceptive failure rates and simulate alterations of the contraceptive method mix in each country. Results show the contribution of contraceptive failure to unintended births and induced abortions to be substantial. On average, 31% of births from unintended pregnancies and 53% of induced abortions resulted from contraceptive failure. Simulations show that if all women who currently use contraceptives began using the most effective (long-acting or permanent) method to meet their fertility intentions, the level of unintended births would decrease by an average of 27%, and the level of induced abortion could be cut in half.

### **190. The Relative Risk Associated with Initiation of Contraceptive Use in India**

*Rohit Kumar Singh, Sambodhi Research and Communication*

The paper attempts to examine the timing of initiation of contraceptive use and relative risk after recent childbirth among currently married women by sociology-economic and demographic characteristics. We tested the hypothesis-whether women who do not want any additional child initiate early use of contraceptive method. Cox-regression model has been used to analyze the first time available calendar data in NFHS-3(2005-06). Interestingly, for illiterate women the acceptance of family planning at 3+ living children as first use has gone up from 38 to 43 percent during 1992 to 2006 (NFHS-1 to NFHS-3). Prevalence of limiting method users is increasing over the period and most of the women have gone for sterilization in same month of last birth (i.e. around 35 percent) in India. The multivariate analysis suggests that antenatal care visits and place of delivery (institution) affects the relative risk to initiate the use of contraceptive method after child birth.

### **190. Incidence of Unintended Pregnancies Worldwide in 2012 and Trends Since 1995**

*Susheela D Singh, Guttmacher Institute; Gilda Sedgh, Guttmacher Institute; rubina hussain, Guttmacher Institute; Michelle Eilers, Guttmacher Institute*

Unintended pregnancies often have negative effects on the well-being of women and families. Estimates of the distribution of pregnancies by intention status and outcomes (induced abortions

and planned and unplanned births and miscarriages) for world regions and subregions were previously estimated for 1995 and 2008. It is important to monitor change in this key measure of reproductive behavior. Updated data are now available on the main components - abortion estimates, demographic and health surveys, UN population and birth estimates - allowing us to develop updated estimates of unintended pregnancies worldwide for 2012. This paper will answer the question of whether and by how much unintended pregnancy levels have changed since 2008, after a period of decline from 1995 to 2008. Differences in levels and trends of unintended pregnancy across regions and subregions will be examined, and trends will be assessed in the context of fertility, contraception and unmet need.

### **190. Contraceptive discontinuation and abortion: exploring the links in Pakistan**

*Kanwal Eshai, Population Council; Saman Naz, Alif Ailaan*

Pakistan's high rate of abortion estimated at 29 per 1,000 women aged 15-49 in 2002 (Sathar et al. 2007) may be explained by the low CPR and high unmet need for family planning (30 percent and 25 percent, PDHS 2006-2007). Using national level qualitative and quantitative data we show that in fact a significant proportion of pregnancies and abortions occur due to contraceptive discontinuation. In-depth interviews with 44 women who had experienced abortion reveal that half of them were contraceptive users at the time of pregnancy. Inconsistent and ineffective contraceptive use, typically involving condoms and explained by a lack of motivation on the part of husbands and ambivalence of wives, lead to unwanted pregnancy. Under-studied in countries with low CPR, contraceptive failure merits research in Pakistan as this can help family planning providers and policy makers support more effective contraceptive use to avoid unwanted fertility and abortions and their consequences.

### **191. Family Size of Children and Women during the Demographic Transition**

*David Lam, University of Michigan; Leticia Marteleto, University of Texas at Austin*

This paper analyzes links between declines in the family size of women and declines in the family size of children during the demographic transition. We extend Preston's (1976) model in two ways. First, we derive the relationship between the variance of women's family size and children's family size, a relationship that has important implications for inequality in children's family size. Second, we analyze family size from the perspective of children of a given age rather than women of a given age. We apply the framework to 310 data sets from the IPUMS-International census project and the Demographic and Health Surveys, representing 101 countries. Consistent with Preston's conjecture, we find that mean family size of children tends to fall more slowly than mean family size of women as fertility declines. The increase in resources per child is 5%-20% smaller than it would be if children's family size decreased at the same rate as women's family size. We show that inequality in children's family size increases substantially as fertility declines, the result of increasing skewness in women's family size.

### **191. Abridged Adult Mortality Table from Cumulative Life Table Survival Ratios – $T(x+5)/T(x)$ above Age 5: Two New Approaches**

*Subrata Lahiri, Independent Consultant and Researcher in Population Studies*

This study presents two approaches of constructing adult mortality table or life table from an appropriate set of survival probability (p-values) from a given set of 5-year cumulative life table survival ratios (in short, 5-cum-LSRs), defined by the ratios  $T(x+5)/T(x)$ , beyond age 5. The set of survival probability (p-values) over ages, so obtained, is not only consistent with the given set of 5-cum-LSRs but also satisfy the usual properties and depicts the true trends of life table p-values over ages. The two approaches for estimating survival probabilities at various quinquennial ages are as follows -- one makes use of algebraic chain relationships between two survival probabilities in the adjacent 5-year age-intervals for a given set of 5-cum-LSRs, and the other one is based on

an iterative procedure under conventional and Greville's approximations for estimating  $L(x, x+5)$  from  $l(x)$ . The empirical investigations of the two approaches based on model life tables show that the estimated  $p$ -values and hence the mortality table so obtained beyond age 5 are almost identical to the true one under certain condition. The empirical and analytical investigations show that non-conventional method, such as - Greville's method, converges much faster than the conventional method of life table construction. Convergence proof is on request.

### **191. Bayesian Reconstruction of Past Populations and Vital Rates by Age for Developing and Developed Countries**

*Mark C Wheldon, Auckland University of Technology (AUT); Adrian E. Raftery, University of Washington; Samuel Clark, University of Washington; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section)*

We show that Bayesian population reconstruction, a recent method for estimating past populations by age, works in a very wide variety of data quality contexts. To date, it has been shown to work only in a single case (i.e., Burkina Faso). Bayesian reconstruction simultaneously estimates age-specific population counts, fertility rates, mortality rates and net international migration flows from fragmentary data while formally accounting for measurement error. As inputs, Bayesian reconstruction takes initial bias-reduced estimates of age-specific population counts, fertility rates, survival proportions and net international migration. Here, we show that the method performs well when applied in a range of data quality contexts by reconstructing the female populations of Laos, a country with little vital registration data where population estimation depends largely on surveys, Sri Lanka, a country with some vital registration data, and New Zealand, a country with a highly developed statistical system and high-quality vital registration data. In addition, we extend the method to apply to countries without censuses at regular intervals. We also develop a method for using it to assess the consistency between model life tables and available census data, and hence to compare different model life table systems.

### **191. Old and New Measures of Population Replacement - A Comparative Review with Application to European countries**

*Giampaolo Lanzieri, Statistical Office of the European Union (EUROSTAT)*

Reproduction measures were most popular between the two World Wars, before various methodological remarks produced a general negative opinion about them. Those measures were essentially developed from one-sex population models with no migration; however, since the second half of past century, immigration has become a relevant component of population change in Europe, and nowadays is the most important one in several European countries. With the acknowledgment of the primary contribution of migration to the population dynamics, scholars have tried to incorporate its effects in the traditional reproduction measures, or they have proposed new indicators, which were then taking more a wider meaning of measures of population replacement. This study makes a comparative assessment, both analytically and empirically, of old and new measures proposed in literature. Further, it uses these demographic tools for a revision of the population replacement dynamics in Europe over the last 50 years. It is shown the similarity between some of the existing measures, as well as their different sensitivity to migration changes. A few additional measures of population replacement, variation of existing indicators, are also proposed for illustrative purposes.

## **192. A case for “reverse one-child” policies in East Asia? Examining the link between education costs and lowest-low fertility**

*Poh Lin Tan, Duke University; S. Philip Morgan, Duke University; Emilio Zagheni, Queens College, City University of New York (CUNY)*

Household spending on education is exceptionally high in East Asia, including Japan, Singapore, South Korea and Taiwan, and has been cited as a cause of low fertility. This observation is sometimes attributed to a cultural emphasis on education in East Asia. In this paper, we present evidence that institutional factors, namely university admissions policies, play an important role in reinforcing pressures on parents to invest in their children’s education. This, in turn, leads to higher costs of childbearing and lower fertility. Using data from the 2005-2007 REFLEX survey, we present quantitative evidence that graduating from a prestigious university is associated with much higher labor market premiums in Japan than in two other countries with very low fertility, Italy and Spain, and corroborating evidence suggesting that the higher premiums are at least in part generated through causal pathways. We model the impact of the higher premiums on investment in education and fertility using a quantity-quality model. Finally, we offer a novel set of “reverse one-child” policies that directly address the unintended consequences of this education-job institutional nexus for East Asian fertility. The policies have the additional virtues of having very low fiscal requirements and reducing social inequality.

## **192. Family Policy and Fertility Rate in Five East Asian Countries**

*Joyce Yonghee Shim, Columbia University; Myung Jin Hwang, Korea University*

Family policies in East Asian countries lag compared to their western counterparts; the International Labour Organization recommends no less than 14 weeks of paid maternity leave and European Union members provide much more generous parental leaves. However, typical leave in most East Asian countries falls below 12 weeks. Incidentally, East Asian countries collectively rank the lowest when it comes to fertility rate; Singapore marked .78, Hong Kong 1.09, Taiwan 1.10, South Korea 1.23, and Japan 1.39 in 2012. While there are many factors that affect fertility rate, this paper looks at whether family policies influence fertility trends in five East Asian countries above from 1980 to 2010 using data collected from national statistical institutes and organizations such as the OECD and ILO. Policy measures focused are (1) parental leave arrangements; (2) childcare services; and (3) financial supports. The study uses ordinary least squares regression, including country and year fixed-effect variables, in addition to taking into consideration other important control variables taken from previous research. Since studies on East Asia are significantly scarce, though previous literature overall indicates the positive impact of family policies on fertility rate, similar effects in East Asia are questionable and thus worth investigating.

## **192. Fertility Intentions and Behavior in a Lowest-Low Fertility Country: Findings from Korea**

*Erin Hye-Won Kim, National University of Singapore*

While there has been a growing literature on low fertility in developed Western countries, little is known about the phenomenon in Asian countries. It is a question of great interest whether the findings from the former apply to the very different context in the latter. The Korean Longitudinal Survey of Women and Families is the first nationally-representative longitudinal survey that contains information both on Korean women’s fertility behavior and on their fertility intentions. Using the 2008 and 2010 waves of the data, first, this paper provides up-to-date pictures of Korean women’s childbearing. I describe whether a woman planned to have a child in 2008 (fertility intentions), and gave birth between 2008 and 2010 (fertility behavior), and the relationship between the two. Next, I examine what determined fertility intentions and behavior with multi-variate logit regressions. Preliminary results show, among women at childbearing ages, only 13.6

percent planned to have a child, and less than one out of ten gave birth over the two-year period. Fertility intentions were good predictors of actual childbirths. Results also suggest support from the government, husbands, and employers affects fertility intentions and/or behavior, providing implications for other Asian countries with low fertility rates.

### **192. Is Reunification the Answer to Low Fertility in South Korea? Lessons Learned from German Reunification**

*Elizabeth Hervey Stephen, Georgetown University*

South Korea experienced below replacement fertility for the first time in 1983, which continued to decline over the next 20 years until it reached 1.2 in 2003 and has remained at that level ever since. In spite of recent pronatalist policies such as Saero-Maji and Vision 2020, fertility has not increased, at least not as of 2012. The reasons for sustained low fertility in South Korea are complex and solutions remain elusive. One option that has been suggested is that reunification with North Korea could solve the eventual decline in the population.

This paper examines current fertility and mortality trends in the two Koreas and prepares population projections for 2020-2050 for a reunified country. Although the conditions surrounding the German reunification experience were vastly different than what Korea will likely experience, it is informative to look at Germany as a guide to the demographic parameters of reunification.

Projections from KOSIS and data from the 2008 North Korea census are used for this analysis. Three models are presented, using three sets of assumptions. Even the highest fertility models show that reunification will not be the answer to population restructuring already underway in South Korea as a result of sustained low fertility.

### **193. The spaces and places of food security: learning from spatial, hierarchical, and econometric models in urban data-poor areas.**

*Anna Carla Lopez, San Diego State University; David Lopez-Carr, University Of California, Santa Barbara, Department Of Geogrpahy; Laura Grant, UWM; John R. Weeks, San Diego State University*

In data poor areas, the use of statistical models is often determined by the quantity and quality of the data.. Here, we explore the pros and cons of three model outcomes, which allow us to evaluate the range of predictions and how they would significantly influence our research conclusions. Using food security survey data for Accra, Ghana collected in 2003, we examine the information derived from spatial, hierarchical, and econometric models respectively. While the data source is the same, the outcomes are different, highlighting the caution researchers must use when determining an appropriate statistical approach. The spatial model delivered vital information on the geographic distribution of food security across the urban landscape, highlight areas of particular concern “hotspots” with statistically significant values. Our use of the hierarchical, or multi-level, model separated the effects of household versus neighborhood variables, allowing us to distinguish the level at which variables were most influential. Lastly, our econometric model emphasized the economic trends among household based on estimated values of household wealth. Together, these three models allow us to draw a more complete picture of food security patterns in Accra, and to draw important and more comprehensive conclusions for policy recommendations.

### **193. Spatial, Social, and Institutional Determinants of Child Delivery Place in Rural Mozambique**

*Victor Agadjanian, Arizona State University; Jing Yao, Arizona State University; Sarah Hayford, Arizona State University*

Whereas the coverage of prenatal care in much of rural sub-Saharan Africa has greatly increased, institutional deliveries continue to lag behind as a substantial share of rural women give birth

outside clinic settings and without professional obstetric care. This study uses unique longitudinal data from rural southern Mozambique to examine both the probability of having an institutional delivery and the choice of clinic for institutional delivery as a function of individual and household characteristics and of location and characteristics of maternal and child health facilities. Spatial and multivariate regression analyses are employed to determine both additive and interactive effects of the two groups of factors in the context of high HIV prevalence and a massive scale-up of HIV testing, prophylaxis, and treatment services.

### **193. Spatial analysis for understanding contextual factors of variation in early marriage trends in Bangladesh**

*Jennifer A Curran, University of North Carolina at Chapel Hill; Nahid Kamal, London School of Economics*

Early marriage has been identified in Southeast Asia as a determinant of lower health and social indicators than girls that marry at an older age. Early marriage can affect educational, social and economic opportunities, as well as the health status of the woman and her offspring. Bangladesh has one of the highest rates of child marriage in the world, and late marriage in Bangladesh is seen as a major pressure on families and social and cultural norms. In Bangladesh, there have been many surveys focused on health and social indicators in Bangladesh. These surveys show differences in health indicators across Bangladesh. Eastern Bangladesh has some of the worst health indicators in the country and are worse than areas of western Bangladesh. However, eastern regions have a much higher mean age at marriage than other regions of Bangladesh. Based upon data from these surveys, early marriage is not directly related to poorer health outcomes across Bangladesh, and late or delayed marriage is not directly related to better health outcomes. This study will apply spatial regressions and spatial regime analysis, to understand the independent variables that factor into age at first marriage variation across districts in Bangladesh as well as which health outcomes are related to age at first marriage in different districts of Bangladesh.

### **193. Does Place of Birth Matter? Spatial Analysis of Infant and Under-five Mortality Rates in India**

*Ankush Agrawal, Indian Institute of Technology Delhi*

This study examines spatial patterns in infant and under-five mortality rates at the levels of agro-climatic zones and Census-districts in India. We find significant spatial correlation both at the national and local level indicating that both global and local environment influences the mortality rates. We identify Assam-East as a spatial outlier. Besides, there exist several hot- and cold-spots in the country. The study further examines determinants of under-five mortality using spatial regression models. Contrary to the existing evidence, we find neither female labor force participation nor general level of modernization help reducing under-five mortality significantly. However, our findings indicated that reducing poverty, improving provisioning of public health interventions like antenatal care to women and immunization of children, and educating women significantly reduce the mortality rates. Integrating health awareness with health policy might be helpful in improving health outcomes. Using OLS without adjusting for spatial heterogeneity may lead to biased and inefficient parameter estimates.

### **194. Exploring the Linkages between Domestic Violence and HIV**

*Kerry LD MacQuarrie, University of Washington; Rebecca A Winter, ICF Macro; Sunita Kishor, Macro International Inc.*

Clinic-based studies routinely report a higher prevalence of domestic violence among HIV-positive women compared to HIV-negative women. This same association is not consistently found in population-based cross-sectional studies. The usual interpretation, if an association is detected, is that domestic violence leads to an increased risk of HIV. Yet a direct effect is unlikely.

If domestic violence increases the odds of a woman having HIV, it must do so indirectly through her own risk behaviors, those of her partner, or her partner's HIV status. Population-based studies seldom explicitly articulate and model the intervening paths through which domestic violence may influence HIV status; Variation in their findings may well depend on variations in the conceptualization of violence, analytic methodologies, and included covariates. Additionally, most studies are based on women's data with limited information on partners' HIV status and risk behaviors. This paper clarifies the ways in which domestic violence contribute to women's HIV status, using recent DHS surveys from five Sub-Saharan countries with data on domestic violence, HIV test results and risk factors for both partners of married/in-union matched couples and guided by a conceptual framework depicting possible pathways by which violence could indirectly effect HIV status.

#### **194. Increasing Awareness of HIV/AIDS Among Women in Central Asia: How Much and for Whom?**

*Cynthia Jane Buckley, University of Illinois, Urbana Champaign*

Extensive efforts to improve reproductive health generally, and to increase awareness of HIV and AIDS specifically, have taken place across Central Asia over the past two decades. Such programs have coincided with significant increases in HIV/AIDS awareness. However, among women comprehensive HIV/AIDS knowledge remains modest across the region, and misconceptions concerning HIV transmission remain. Differentials by age, education, and rural/urban residence in awareness and knowledge regarding HIV and AIDs persist among women in the countries of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. Using Demographic and Health Surveys and Multi-Cluster Indicator Surveys from 1999 through 2011 and reports, records, and interviews from health programs in the region, I examine increases in HIV and AIDS knowledge, tracing patterns of improvement across demographic, social and cultural sub groups within each country. Findings indicate a concerning trend in poor knowledge relating to needle transmission (the major transmission route for HIV in the region) and a persistent gulf in reported knowledge (at all levels) by marital status, age, education and urban residence. These results raise questions concerning the relevance of programmatic content (emphasizing ABCs and sexual transmission) in the region and program access and reception.

#### **194. Prevalence of HIV among women in Malawi: Identify the most-at-risk groups for targeted and cost-effective interventions**

*Jacques Be-Ofuriyua Emina, University of Kinshasa; Mathias Kuepie, CEPS/ INSTEAD, Luxembourg; Yazoume Ye, ICF International; Nyovani Madise, University of Southampton; Eliya Msiyaphazi Zulu, African Institute for Development Policy (AFIDEP)*

Though global HIV/ AIDS incidence is declining, HIV/AIDS remained the leading cause of death in women of reproductive age in low-and middle-income countries, particularly in sub-Sahara Africa. Given the high costs of HIV treatment, evidence-based targeted interventions are advocated as cost-effective strategy to fighting HIV/AIDS. This study aims to assess the socioeconomic predictors of HIV infection and identify the most-a-risk groups among women in Malawi using a Chi-square Automatic Interaction Detector. The analysis was performed on a sample of 8,596 women aged 15-49 years from the 2004 and 2010 Malawi Health and Demographic Surveys. The results revealed that marital status is the most significant predictor of HIV infection among women in Malawi. Women who are no longer in union and living in the households within the highest wealth quintiles were the most-at-risk group of HIV infection. The less-at-risk group included nulliparous never married women living in the rural areas. In the light of these findings, we recommend targeted interventions taking into account HIV prevalence and the demographic size of different groups at risk groups; and reinforcement of integration of family

planning and HIV/AIDS services through community health workers, households and school based campaign and reproduction health services.

#### **194. Urban-rural differentials in the association between HIV infection and poverty in Kenya**

*Monica Akinyi Magadi, University of Hull*

The link between HIV infection and poverty has attracted considerable research attention in recent years, but the relationship is rather complex and findings from existing studies remain inconclusive. While some argue that poverty increases vulnerability, existing empirical evidence from sub-Saharan Africa largely support the view that wealthier men and women, especially rural residents, have higher prevalence of HIV. In this paper, we focus on urban/rural differentials in the association between HIV infection and poverty in Kenya. The study is based on secondary analysis of data from the Kenya Demographic and Health Surveys conducted in 2003 and 2008. We apply multilevel logistic regression models, allowing the poverty risk factor to vary across rural and urban communities (i.e. clusters) in Kenya. The results suggest that the urban poor in Kenya have significantly higher odds of HIV infection than their urban non-poor counterparts, despite poverty being associated with a significantly lower risk among rural residents. Interesting urban/rural differentials are observed in poverty risk factor by key demographic and socio-cultural characteristics, including gender disparities and ethnicity. For example, the rich-poor gap among urban residents is wider for women, with poor urban women being particularly vulnerable.

#### **195. A pay-for-performance innovation for improving maternal health services in Bangladesh**

*Ubaidur Rob, Population Council; Md. Noorunnabi Talukder, Population Council; Laila Rahman, University of Toronto; Ismat Ara Hena, Population Council; Mst. Farhana Akter, Population Council; Nargis Sultana, Population Council*

In Bangladesh, low use of facilities for maternal health services in rural areas has been a critical challenge to the health system in reducing maternal mortality. Health facilities in rural areas operate at less than their capacity due to shortage and sub-optimal performance of service providers. An operations research was conducted to test the feasibility of pay-for-performance (P4P) approach, through which financial incentive was provided to motivate the team of managers, direct and indirect providers, and administrative and support staff of a facility for achieving both quantity and quality targets on maternal health services set for the institution on quarterly basis. Performance of a facility was measured using service statistics and quality assessment reports. An external body with an obstetrician, an anesthesiologist and a pediatrician was formed to assess the facility performance every three months and subsequently incentive was paid to the eligible facility. Performance-based incentive motivated additional efforts which caused to increase service volume remarkably, and the facilities also succeeded in improving quality of services. Performance-based incentive is required until it significantly increases the rate of institutional delivery, a key requirement to reduce maternal mortality.

#### **195. Can Community Health Services Offset the Effect of Poverty and Low Maternal Educational Attainment on Childhood Mortality? Evidence from the Navrongo Experiment in Northern Ghana**

*Ayaga A. Bawah, Columbia University*

The Government of Ghana has instituted a National Poverty Reduction Program with an initiative known as the Community-based Health Planning and Services (CHPS) as its core health development strategy. Originally launched as an experimental project of the Navrongo Health Research Centre, CHPS is currently a national initiative for shifting the focus of primary health care from clinics to communities. Four contrasting strategies of community health care were

tested. In response to early evidence that community nursing could impact on survival, CHPS was launched to scale up the Navrongo community health service delivery system. The program currently functions in over 1000 villages dispersed in all 172 districts of Ghana. This paper presents a longitudinal demographic survival histories of 17,967 under age five children who were observed over the July 1993 to December 2010 period. Analysis of trends show that placing nurses in CHPS communities was associated with more pronounced mortality declines than was observed in comparison communities. Differentials show that Navrongo study areas exhibit equity relationships that are often observed elsewhere in Africa: Children whose parents are uneducated and relatively poor experience significantly higher mortality than children of the educated and less poor. Time conditional We

### **195. Health transition before and after 1995 health reform in Taiwan**

*Chi-Tsun Chiu, University of Texas at Austin; Meng-Fan Mandy Li, Shih Chien University; Yasuhiko Saito, Nihon University*

We examine the effect of health reform in 1995 in Taiwan on health transition among the elderly Taiwanese, including functioning, disability and death by employing a nationally representative longitudinal survey, the “Survey of Health and Living Status of the Middle Aged and Elderly in Taiwan” for analyses. This study ran hazard models over 3 to 4 years to analyze changes from no physical function problem to having difficulty in physical functioning, no ADL/IADL problem to disability, and alive to dead. We found the higher-education benefited from national health insurance (NHI) more than the lower-education to get better mortality outcome. Because the higher-education were more likely to know when the new technology/medicine were available and covered by NHI. As for disability and physical functioning, our study showed that NHI helped to eliminate the income gap by allowing the lower income groups to have better access to health care after health reform.

### **195. Survival after colorectal cancer in a screened vs an unscreened population**

*Astri Syse, Norwegian Social Research*

Background: Risk factors, early diagnosis and treatment for colorectal cancer (CRC) vary, and results in differences in incidence and outcomes across societies. To assess the influence of early diagnosis, we compare survival after CRC in a screened vs an unscreened population. Methods: Relative survival (RS) analyses were performed to assess differences in outcomes for all CRC patients diagnosed in US SEER (2004, N=9349) and Norway (2004-05, N=8318). 39% died within three years. Results: Stage distributions at diagnosis were different in US vs Norway (42% vs 22% localized; 35% vs 48% regional; 19% vs 23% distant). No (13%), minor (16%) or large (71%) resection rates were similar, but age and stage dependent. Overall 3-year RS was 72% in US and 67% in Norway. In multivariate models of age, sex, stage, and treatment, a weak country-effect was observed (EMR 0.9, CI 0.9-1.0), indicating better survival in the US, but this was significant for the youngest patients only (EMR 0.9, CI 0.8-0.9) for whom screening is an option. Conclusion: The advantageous RS observed for US patients, and particularly for patients <80 years, likely reflects the earlier stage distribution, perhaps explained by different CRC screening practices as the US recommends screening whereas Norway does not.

### **196. Childhood residential mobility and adult outcomes**

*Marianne Tønnessen, Statistics Norway; Kjetil Telle, Statistics Norway; Astri Syse, Norwegian Social Research*

Childhood moving has been associated with negative outcomes, almost regardless of the specific outcome studied. Most studies struggle to differentiate whether the move is harmful in itself or whether the adverse outcomes are results of underlying causes. We use detailed data on complete cohorts of children born in Norway 1965-1980 (N=967 151), their parents and siblings, and

information on all their residential relocation between the around 400 municipalities in Norway. We use both logistic regression and sibling fixed-effects models. First, we assess how different outcomes are affected by the number of times a child has moved. Next, we examine whether the child's age at moving is important. The results suggest that risks for not completing high school, low adult income, early parenthood and early mortality increase with each additional residential relocation during childhood. For instance, odd ratios for not completing high school were 1.64 (CI 1.61-1.68) for children who moved more than 3 times compared with non-movers. The logistic regression results were largely confirmed by the sibling fixed-effects models. Considering age at moving, we found that moves prior to elementary school did not have significant adverse long-term effects, whereas moves during middle school (13-15 years) appeared to be particularly detrimental.

### **196. Family Structure, Housing and Child Health**

*Wendy Sigle-Rushton, London School of Economics and Political Science (LSE)*

Why is it that children who live with a single mother two cohabiting parents have poorer health and developmental outcomes than children who live with two biological parents? Differential access to high quality and stable housing circumstances by family structure may be one important factor, especially in countries like the United States where housing costs are high and housing assistance is limited. Because family structure is strongly linked to income, married, two parent families are in a better position to be able to afford appropriate housing. Dissolution, more likely amongst unmarried parents, is likely to be linked to housing instability and moves into lower quality or public housing projects, both of which have been shown to be negatively associated with child outcomes. Using data from the Fragile Families and Child Wellbeing Study, this paper uses both standard OLS techniques and graphical chain models to identify and explore the inter-relationships between housing, family circumstances and child health. Preliminary findings suggest strong links between family structure and housing. For general health and asthma, in particular, housing tenure appears to be an important explanatory pathway, and social housing tenants appear particularly disadvantaged.

### **196. Family Complexity and Child Health in Botswana**

*Oleosi Ntshabe, University of Southampton*

The relationship between family structure and child well-being has been little studied in lower income settings. In Botswana new household types have emerged with increases in female headship, non-marital childbearing and parental cooperation with other household members. This study examines the association between household structure and child health in Botswana, measured by physical health. The study pays more attention to the heterogeneity of the household membership. This involves a larger kin network beyond biological parents. Second, the study explores if contextual factors are associated with child health. Three measures of child health assessed are stunting, diarrhoea and acute respiratory infection. Data used are from the 2000 Multiple Indicator Survey (MICS), and the 2007 Botswana Family Health Surveys (BFHS). Simple and logistic multilevel models are used to control for confounding variables associated with child health. The study demonstrates the importance of shared household resources, processes, and family functioning that goes beyond biological parent families on child health outcomes.

## **196. Parental Migration and the Emotional Well-Being of Children in Ghana, Nigeria, and Angola**

*Valentina Mazzucato, Maastricht University; Victor Cebotari, Maastricht University; Angela Veale, University College Cork; marzia - grassi, institute of social sciences - university of lisbon*

Studies on children 'left-behind' indicate that children suffer emotionally from parental migration. Yet, most of these studies are case studies with no comparison group, leaving open the question whether the findings relate particularly to transnational families. Also, most studies target Latin America or Asia. The literature identifies important factors for children's well-being: which parent migrates, length of separation, networks of family support and school systems. This study investigates children's well-being through a cross-national survey conducted in 3 African countries in 2010-11 (Ghana N=2,760; Angola N=2,243; Nigeria N=2,168). It compares children in transnational families with those living with their parents in the country of origin. As such it further tests findings from previous qualitative studies and adds the case of African transnational families to the literature. Children's emotional well-being is measured through the Strength and Difficulties Questionnaire. Results show that children present greater emotional difficulties when the mother or both parents have migrated, live with non-kin, change caregiver often, and have their migrant parent(s) away internationally. Negative emotional well-being is further associated with low economic conditions and divorced or separated families that children are in.

## **197. L'entrée en vie adulte des fils et filles d'immigrés**

*Christelle Hamel, Institut National d'Études Démographiques (INED); Moguerou Laure, Université Paris Ouest Nanterre La Défense; Santelli Emmanuelle, CNRS*

Si les disparités sociales et de sexe dans l'expérience du passage à l'âge adulte sont largement étudiées, le devenir de certains sous-groupes de la population est demeuré peu exploré dans les études quantitatives. La présente communication se propose de décrire les modalités du passage à l'âge adulte des filles et fils d'immigrés résidant sur le territoire français métropolitain dans une perspective statistique. L'enquête Trajectoires et Origines, réalisée par l'INED et l'INSEE en 2008 sur les trajectoires sociales et les conditions de vie des immigrés et enfants d'immigrés résidant en France métropolitaine, apporte de nouvelles données permettant de conduire une telle analyse et de comparer leur entrée dans la vie adulte à celle des autres jeunes n'ayant pas de parents immigrés. Quels sont les itinéraires des jeunes issus de l'immigration ? Leurs parcours diffèrent-ils selon que leurs parents sont originaires de contextes nationaux différents ? Qu'en est-il des distinctions entre femmes et hommes ? Sont-elles plus ou moins prononcées que pour les autres jeunes ?

## **197. Race and Gender Inequalities Faced by Immigrants' Descendants when Entering the French Labor Market**

*Elsa Steichen, Institut National d'Études Démographiques (INED)*

This research investigates the school-to-work transition of immigrants' descendants in France by focusing on the intersection of race and gender inequalities. For some decades, the descendants of immigrants have been reaching the age of leaving school and entering the labor market. More recently, descendants of non-European immigrants are reaching this crucial step of the transition to adulthood. There is a growing concern regarding their school-to-work transition as they face racial discrimination. We question the "double discrimination" hypothesis which states that second generation women should be the most disadvantaged as they potentially face both racial and gender discrimination. In this light, we analyze the labor market entry of young adults who finished their schooling in 2004 and were followed over five years in the Génération 2004 longitudinal survey. Results show that while descendants of European immigrants do not face racial inequality, those having non-European parents are disadvantaged. Regarding women of the non-European second generation, they do experience gender based disadvantages but the combination of race and gender does not systematically lead them to the most unfavorable labor

market outcomes. Therefore, results do not point to a systematic addition of race and gender based disadvantages.

### **197. Transitions to residential independence among young second generation migrants in the UK: The role of ethnic identity**

*Ann M Berrington, University of Southampton; Peter Tammes, University of Southampton*

This paper fills a gap in our knowledge and understanding by focusing on pathways out of the parental home for second generation migrants in the UK. Migrants from the Caribbean, India, Pakistan and Bangladesh who arrived in the UK during the 1960s, 70s and 80s produced a second generation now in their twenties and thirties. Given the greater levels of education and labour market participation of the South Asian second generation, we expect to see a delay in family formation to later ages and more diverse routes out of the parental home, more consistent with the white population. The first generation of Caribbean migrants tended to have more “modern” family situations with a large proportion living without a partner, many as lone parents. We examine whether this continues to be relevant for the contemporary second generation. We argue that adherence to traditional family formation patterns will be greater amongst those second generation young adults who identify more strongly with their parents’ ethnicity. We test this explicitly within our analytical framework which includes two indicators identifying the extent to which young adults’ identify themselves with their parental ethnic group and the importance they put on “being British”.

### **197. Family poverty and the socioeconomic attainments of youths of immigrants**

*Lisa Kaida, Memorial University of Newfoundland*

While interest in the consequences of childhood poverty is longstanding, quantitative research on the attainment of children of poor immigrants is limited. This study focuses on the short-term consequence of poverty for the employment outcomes of youths of immigrants in Canada using data from the Youth in Transition Survey Cohort A, a longitudinal survey of high school students aged 15 in 2000. The analysis finds growing up in poor families reduces the probability of employment during the school year for the youths of immigrants and non-immigrants. Such negative impacts of family poverty persist, independent of parental human capital. Moreover, while poverty has a greater negative impact on the employment of youths of immigrants than their non-immigrant counterparts, the negative impact of poverty diminishes once their migration-related characteristics are adjusted. Further, once employed, youths of poor immigrants work longer hours than their non-poor counterparts. While family poverty also has a positive impact on the work hours of children of non-immigrants, the impact is small compared to their immigrant counterparts. These findings suggest poverty during adolescence influences the socioeconomic attainments of youths of immigrants in a complex way, which underscores the importance of focusing on this select population.

### **198. Because they’re worth it! The economic value of informal care provided to French people aged 75 years and over**

*Berengere Davin, INSERM, UMR912 (SESSTIM), Aix Marseille University, ORS PACA; Alain Paraponaris, UMR INSERM 912 & ORS PACA; Christel Protiere, INSERM U912*

With the ageing of the population, countries face challenges, particularly with regard to long term care. Caring for disabled elderly entails both public and private costs that amount to billions of euro per year. But the value of informal care is often missing. The aim of the study is to assess the cost of informal care provided to people aged 75 years and over, applying the contingent valuation method. Data from a French survey on informal caregivers are used. A two-step model à la Heckman is implemented in order to both analyze factors associated with the reported amount of willingness to pay for an extra-hour of care, and reasons why some informal caregivers did not

give a value (protest respondents). Results are enhanced with findings from a qualitative survey. Age, proximity, mental health seem convey the need for informal caregivers to be recognized, as well as their need for respite due to the burden they bear. Socioeconomic factors are also important: the higher informal caregiver's and care recipient's income is, the higher the reported amount is. These elements could be useful to public policies which try to develop measures that both promote and relieve informal care provided to the elderly.

### **198. Old and Poor: the Case of Elderly Poverty in East Java, Indonesia**

*Evi Nurvidya Arifin, Institute of Southeast Asian Studies*

Analyses of poverty are rarely disaggregated by age. This paper's novelty lies in examining poverty rate among older persons, considering individual and household variables. It further examines variables associated with poverty, specifically framing the analyses within the context of economic disparity in the province. Three districts are selected and analyzed separately derived from the 2002 Indonesian National Socio-economic Survey. A formula is used to estimate the rate and severity of poverty. Logistic regression model is used. Our findings suggest that elderly poverty rate varies among the districts with the lowest (5%) occurring in the highly urbanized district of Surabaya, while the rate is much higher in others (22.2% in Pacitan, and 22.8% in Malang). Age, sex, marital status, education, living arrangement, and social participation are significant. Household variables (such as the size of household, asset ownership, and whether the household is the target of poverty alleviation policy) are also significant. In urban area, those living with children are more likely to be poorer than those without children. Yet, in less urbanized areas, those with children are less likely to be poorer than those without children.

### **198. Out-of-pocket expenditure on health care among elderly and non-elderly households in India**

*Rajesh Kumar Chauhan, Population Research Centre, Department of Economics, University of Lucknow; Sanjay K Mohanty, International Institute for Population Sciences (IIPS); Sumit Mazumdar, Cssc; Akanksha Srivastava, International Institute for Population Sciences, Mumbai*

Using 66th round of consumption expenditure data, National Sample Survey, 2009-10, this paper tests the hypothesis that the monthly per capita household health spending is significantly higher among elderly households compared to non-elderly households. The households are classified into three mutually exclusive groups; households with only elderly members (elderly households), households with elderly and non-elderly members and households without any elderly member. The health spending include the institutional (hospitalization) and non-institutional health expenditure of the household, standardized for 30 days. Descriptive statistics and two part model are used to understand the differentials of health expenditure across households. Results indicate that the monthly per capita health spending of elderly households is 3.8 times higher than non-elderly households. Health spending accounts 13 percentage of consumption expenditure of elderly households, 7% among households with elderly and non-elderly members and 5% among non-elderly households. Controlling for social, economic and demographic correlates, the per-capita household health spending among elderly households was significantly higher than non-elderly households. The health expenditure is catastrophic for poorer households, casual laborer and households with elderly m

### **198. Poverty, Perceived Economic Strain and Psychological Distress among Older Thai Adults**

*Kattika Thanakwang, Institute of Nursing, Suranaree University of Technology*

This study examines the relationships between poverty, defined as having income below the poverty line, perceived economic strain, and psychological distress among older Thai adults. Data were taken from the 2002 National Elderly Survey in Thailand. The sample included 21,417 older

men and women aged  $\geq 60$  years. Multiple regression models were employed for data analysis and findings revealed that elderly poverty was significantly associated with perceived economic strain and psychological distress. After controlling for socio-demographic and health-related variables, perceived economic strain fully mediated the effect of poverty on psychological distress. Family support had a powerful buffering effect on the relationship between poverty and economic strain, as well as between poverty and psychological distress. Policy and strategies targeted at poverty and economic strain in late life, and filial support should be continuously promoted.

**199. Analyse comparée des parcours scolaires et projections d'élèves de 8 pays d'Europe**  
*Alexandra Filhon, Université Rennes 2*

Dans le cadre d'une recherche comparée, nous cherchons à saisir les perspectives d'avenir de collégiens originaires de plusieurs pays d'Europe. Jusqu'où se projettent-ils ? Quels sont les principaux déterminants qui expliquent une plus ou moindre grande ambition scolaire ? Dans l'objectif d'expliquer et comprendre la construction de ces trajectoires éducatives, nous interrogerons la réussite scolaire de jeunes collégiens au regard du contexte national dans lequel ils évoluent mais aussi en observant plus finement leurs propres perspectives d'avenir ainsi que les différents modes d'implication de leurs parents. Nous nous appuyons sur une recherche quantitative réalisée dans 8 pays européens (Allemagne, Finlande, France, Italie, Pays-Bas, Pologne, Royaume Uni et Slovaquie). Il s'agit volontairement de pays contrastés par leur taille, leur ancienneté dans l'Union européenne ou encore leur type de système éducatif. Dans le cadre du 7ème programme de la Commission européenne, la recherche GOETE (<http://www.goete.eu/>), (Governance of educational trajectories in Europe) réalisée en 2010 nous permet de revenir sur les parcours scolaires d'adolescents, en prenant en considération leur point de vue mais aussi celui de leurs parents. Cette enquête repose en effet sur un échantillon de 6 389 collégiens et de 3408 parents.

**199. Bolsa Família Program in Brazil: assessing the impact on educational indicators of children and adolescents by regions.**

*Regiane Carvalho, Universidade Federal de Minas Gerais (UFMG); Julio Alfredo Racchumi, CAEd - UFJF*

The objective of this study is to evaluate the impact of receiving Bolsa Familia Program (BFP) on the school performance of Brazilian children and adolescents in different age groups and in different regions of the country. The BFP, created in 2003, benefits about 13 million families in poverty and extreme poverty through direct transfer of income. One of the conditionalities for receiving the benefit is that children between 6 and 17 years old attend schools regularly. The data come from two sources: an external evaluation of the Center for Public Policy and Education Evaluation (CAEd) applied to students in public education and the National Household Sample Survey (PNAD) conducted by the Brazilian Institute of Geography and Statistics (IBGE) both in 2011. After a simulation to estimate the beneficiary families in PNAD, the methodology employed is the Propensity Score Matching that allows comparison of beneficiary families and not beneficiaries whose observable characteristics are similar. The results illustrate, by some indicators, the impact of Bolsa Família on the school performance of children and adolescents after nine years of program deployment.

**199. Family Dynamics and School Performance: Examining the role of parental relationship on school performance among unmarried youths in India**

*Ravi Prakash, Population Council*

Numerous studies have found linkage between quality of parents' relationship and positive outcomes for children. While, most of these findings come from the developed countries, there are a few from developing world that examines the association between parental relationship and

youth development. Many of these studies, especially in Indian context, have considered health as an indicator of development. Yet very little research has examined whether this association holds good for other development indicators, for example schooling. Moreover, whether the association varies across various population subgroups, especially among men and women? Drawing on the data from a sub-nationally youth representative study in India, this paper examines how parent-child relation and parental characteristics contribute in better school performance such as school continuation, completion of age-appropriate level of schooling, successful completion of the last class and regular class attendance. Analyses focus on more than 11,000 unmarried men and 17,000 unmarried women aged 15-24 years. Results indicate that the parents' relationship quality is very consistently and positively associated with a range of schooling outcomes. This association holds for both unmarried young men and women participated in study at national and sub-national levels.

### **199. The influence of family size on the achievement of human capital by children aged 15-19 years in urban areas of Iran**

*Hossein Mahmoudian, University of Tehran; Mohammad Torkashvand, University of Tehran*

The human capital is defined as knowledge, skills, and other abilities which will lead to improvement in the quality and level of production. The capital achieved at younger ages would have stronger effects on the progress at later ages. Family has shown to have crucial influence on the achievement. Iranian families are now experiencing a low level fertility, highly educated parents, and a relatively high level of family dissolution. Using data drawn from the Time Use Survey (conducted during 2008-2009), this paper aims to examine the effects of the number of children on the achievement of human capital by young children in urban areas of Iran. Target population includes 2183 never-married children aged 15-19 years. Findings show a negative relationship between the number of children and the achievement of human capital. A sharper difference exists between families with one or two children and families with 3 and more children. Multivariate analyses show the significant effects of the sex and age of children, and the mother's level of education. The presence of such control variables, however, does not change the effect of number of children. The results can show the sustainability of low family size (two-child family) in future.

### **200. Mortality and living standards in Asia and Europe, 1700-1900**

*Tommy Bengtsson, Lund University; James Lee, Hong Kong University of Science and Technology; Cameron Campbell, UCLA*

Comparing populations in China, Japan, Italy, Belgium, and Sweden using individual level longitudinal data, for which we know population at risk and occupation, we find the mortality response to short-term economic stress is quite similar in size but have different patterns in Asia and Europe. While Europe has a clear socio-economic gradient in the response—the landless proletariat suffers but not the farmers—in Asia almost all households suffer, but not all of their members. In Asia the mortality response followed the golden rule of biology, in that members closely related to the household head are doing well, while more distant household members suffer from increasing mortality in years of high food process. We also find that the response diminished during the latter part of the nineteenth century, both in Asia and Europe, indicating improvements in living standards for the vulnerable groups. The result not only question the classical view on the immense population pressure and poverty in Asia, comparative to Europe, but also cast a new view of the demographic transition theory.

## **200. Migrations in the Adjustment between Population and Resources. Eurasian Contributions**

*Michel Oris, Université de Genève; Martin Dribe, Lund University; Marco Breschi, University of Sassari*

It is well-known that in the classical formulation of the demography transition theory migration is essentially seen as a result of the changing balance between births and deaths. In the components of the old East-West debate that are rooted in the Malthusian writings, adjustment behaviours decreasing population pressure on scarce resources have been considered, with an emphasis on marriage and infanticide, migration being barely considered. From a heuristic point of view, poor theoretical developments are associated with poor data sources. Indeed, accurate information on mobility and migrants are very rare in historical population. This is one of the wealth of the Eurasian Project for the Comparative History of Population and the Family to be funded on a network of teams who reconstituted population registers data that fill his gap in our knowledge for various rural and pre-transitional settings in Japan, China, Sweden, Belgium and Italy. In this paper, our ambition is to synthesize the many contributions brought by our fellow associates during the last 15 years and to evaluate at which point our findings can be generalized to illuminate the current scientific debates.

## **200. Prudence and Pressure: Reproduction and Human Agency in Europe and Asia, 1700-1900**

*Noriko Tsuya, Keio University; Feng Wang, Brookings-Tsinghua Center for Public Policy; George Alter, University of Michigan; James Lee, Hong Kong University of Science and Technology*

This paper summarizes the arguments and major findings from the volume *Prudence and Pressure: Reproduction and Human Agency in Europe and Asia, 1700–1900*, published in 2010 by MIT Press. The book is a systematic and truly comparative examination of human reproduction and social organization in preindustrial communities from both ends of the Eurasian landmass. In contrast with previous studies of historical fertility that focused primarily on European experiences, the volume seeks to develop an Eurasian perspective.

Using individual-level longitudinal data drawn from household registers in populations from 5 countries/regions in preindustrial Europe and East Asia, and employing techniques of event-history analysis, our study uncovers the dynamic mechanisms of reproductive behavior under changing household and local economic circumstance. Our study finds that reproductive behavior and rationales were remarkably similar, despite many differences between the East and the West. Hence, we refute the previously held characterization that “prudence,” fewer children due to late marriage, was more characteristic of reproduction in the preindustrial West while “pressure,” high mortality (especially infant mortality/infanticide) due to over-population, was more prevalent in the East.

## **200. Similarity in difference in pre-industrial Eurasian marriage**

*Christer Lundh, University of Gothenburg; Satomi Kurosu, Reitaku University*

The paper presents results from studies on marriage in local Eurasian populations that qualify and in some cases contradict the picture of the Malthusian East-West dichotomy. The design builds on the comparison of the outcome and determinants of marriage in seven local populations in pre-industrial Europe and Asia, using longitudinal individual-level data and event history analysis. When studying the mechanisms of marriage at the individual and household levels, we find the expected difference between Europe and Asia in the general pattern, but also variation within regions and much similarity in human behavior. We found a strong positive association between socioeconomic status and timing of marriage in all male populations regardless of the dominant household formation system, and for women in populations with nuclear households and inheriting women in Japan. Another important finding is that differences were much smaller than expected

between the Asian and European populations in relation to gendered and parental authority and individualism. The gender difference in the timing of first marriage was quite similar in the European and Asian populations. We also found several indications of parental control or influence in relation to the marriage process in the European populations.

### **201. The human core of the Shared Socioeconomic Pathways : Population scenarios by age, sex and level of education for all countries**

*K.C. Samir, International Institute for Applied Systems Analysis (IIASA); Wolfgang Lutz, International Institute for Applied Systems Analysis (IIASA)*

This paper applies the methods of multi-dimensional mathematical demography to project national populations based on alternative assumptions on future, fertility, mortality, migration and educational transitions that correspond to the five SSP storylines. In doing so it goes a significant step beyond past population scenarios in the IPCC context which considered only total population size. By differentiating the human population not only by age and sex – as is conventionally done in demographic projections – but also by different levels of educational attainment the most fundamental aspects of human development and social change are being explicitly addressed through modeling the changing composition of populations by these three important individual characteristics. The definitions of assumptions about future fertility, mortality, migration and education trends are based on a major new projections effort by the Wittgenstein Centre for Demography and Global Human Capital (IIASA, Austrian Academy of Sciences and WU-Vienna University of Economics) involving more than 600 experts from around the world.

### **201. What are the carbon emissions elasticities for income and population? New evidence from panel estimates robust to stationarity and cross-sectional dependence**

*Brantley Liddle, Centre for Strategic Economic Studies, Victoria University*

Knowledge of the carbon emissions elasticities of income and population is important both for climate policy/negotiations and for generating projections of carbon emissions. However, previous estimations of these elasticities using the well-known STIRPAT framework have produced such wide-ranging estimates that they add little insight. Among the possible reasons for such disparate results are: (i) the different datasets analyzed and, in particular, whether elasticities were allowed to differ according to development level; (ii) the additional independent variables besides population and income that were considered; and (iii) the various methods used—specifically, the data's time dimension and whether/how the stationarity properties of the data were considered/addressed. This paper estimates a model that addresses the above issues, as well as the issue of cross-section dependence. Among the findings are that the carbon emissions elasticity of income is highly robust; that elasticity for OECD countries is less than one, and likely less than the non-OECD country income elasticity (which is not significantly different from one). By contrast, the carbon emissions elasticity of population is not robust; however, that elasticity is likely not statistically significantly different from one (for either OECD or non-OECD countries).

### **202. Unmarried Cohabitation in the Americas: Unveiling the Spatial Dimension**

*Antonio Lopez Gay, Centre d'Estudis Demogràfics; Iñaki Permanyer, Centre d'Estudis Demogràfics; Julian López Colás, Universitat Autònoma Barcelona; Anna Turu, Centre d'Estudis Demogràfics; Benoît Laplante, Institut National de la Recherche Scientifique (INRS); Sheela Kennedy, Minnesota Population Center; Albert Esteve Palos, Centre d'Estudis Demogràfics*

This paper presents the map unmarried cohabitation in the Americas. The map offers a large scale cross-national perspective together with small area estimates of cohabitation. Census microdata from 41 countries and more than 17,000 units have been pulled together to map the percentage of cohabitation among women in union aged 25 to 29. From Canada to Argentina, results show inter-

and intra-national contrasting regional patterns. The highest rates of cohabitation are found in areas of Central America, the Caribbean, Colombia and Peru. The lowest rates are mainly found in the United States and Mexico. Brazil, Argentina and Chile occupy intermediate positions. In all countries, there is substantial spatial heterogeneity, as indicated by spatial autocorrelation statistics. Our results beg the question as to which forces have shaped these patterns and remind us that such forces need to be taken into account to understand recent patterns and rises in cohabitation.

## **202. Neighborhood effects in demography: measuring scales and patterns**

*Sébastien Oliveau, Aix-Marseille University; Doignon Yoann, Aix-Marseille Université; Christophe Z Guilmoto, Institut de Recherche pour le Développement (IRD)*

Demographic phenomena show spatial regularity and specific patterns which need to be studied. Development of GIS and Geodatabase brought maps common, and recent developments of spatial analysis allow going further than mapping to measure spatial structure. Neighborhood and scale are two dimensions of demographic data which can't be no longer ignored.

This paper proposes an original exploration of spatial dimensions of demographic variables (density, proportion of 65+ in the population, proportion growth) through the systematic analysis of French census data at various scales (6 administrative divisions) and times (6 censuses from 1968 to 2007).

Using moran's I and LISA, we consider the effects of scales and neighborhood on spatial patterns. The results underline the necessity to better take space into account in statistical analysis.

## **202. Partitioning the Spatial Spillover Effects of Social Conditions on Mortality: An Example Using US County Data**

*Tse-Chuan Yang, University At Albany, State University of New York; Carla Shoff, The Pennsylvania State University; Aggie J. Noah, Pennsylvania State University*

It has been argued that social conditions are the fundamental determinants of health for those agents who possess them, and this argument has been bolstered by both individual and ecological studies. However, little is known about whether social conditions also benefit others nearby. Using the US county mortality data, we fill this gap by first theorizing the relationships between the social conditions of a county and the mortality of its neighbors with spatial spillover and social relativity perspectives. We then measured social conditions with income inequality, social capital, social affluence and concentrated disadvantage and used spatial Durbin modeling and spatial partitioning technique to examine the effects of these variables on mortality across space. The analytic results suggested that (1) social conditions of a specific county are not only related to its own mortality but also the mortality in neighboring counties; (2) The partitioning results provide evidence for spatial feedback, which underscores the importance of spatial structure underlying the data; and (3) The immediate neighbors (those shared the same boundaries or a vertex) play a more important role in understanding the direct impacts of social conditions on mortality than those neighbors far away. These findings provide new insight to mortality research.

## **202. Spatial pattern and determinants of fertility behavior in India**

*Debasish Nandy, Gokhale Institute of Politics and Economics (GIPE), BMCC Road, Deccan Gymkhana, Pune – 411004, Maharashtra, India*

India's fertility is declining and at present the country is experiencing significant demographic transition. The fertility pattern at the district level shows robust spatial and spatio-temporal clustering of low fertility values on the one hand and spatial heterogeneity in fertility pattern on the other. While the role of socio-economic factors in explaining fertility variations and its decline have been analyzed in detail, limited attention has been given to explain why reproductive behaviour shows clear spatial dependency resulting in robust spatial clustering at different fertility

levels. The present study tries to bridge this gap. Employing geo-spatial technique, it brings out the pattern of spatial clustering in fertility and its regional variations from 1981 to 2011. Next, multivariate research methodology has been applied to analyse the relative role played by space in explaining fertility variations during the last three decades. Our findings taken together indicate that spatial diffusion has played a crucial role in India's ongoing fertility transition.

Key words: Fertility transition, spatial contiguity, contour maps, spatial regression, spatial diffusion, etc. JEL Classification: J13, J11, C15, C31, etc.

### **203. Buddhism and childbearing in Asia**

*Vegard Skirbekk, International Institute for Applied Systems Analysis (IIASA); Setsuya Fukuda, National Institute of Population and Social Security Research; Thomas Spoorenberg, United Nations Population Division; Marcin Stonawski, International Institute for Applied Systems Analysis (IIASA) / Cracow University of Economics; Conrad Hackett, Pew Research Center*

Buddhism is the dominant religion in a number of Asian countries and the most common religion in some of the countries with the lowest fertility levels in the world. The relationship between Buddhism and childbearing has received comparatively limited scholarly attention so far. Studies of childbearing in other religions tend to find that religiosity is positively related to fertility. After considering Buddhist teachings regarding contraception, family formation, and childbearing ideals, we do not find evidence that Buddhism is inherently pronatalist. Our hypothesis is the Buddhist affiliation and commitment level is not associated with higher fertility. We analyze patterns of childbearing among Buddhists in several Asian countries: India, Cambodia, Nepal, Indonesia, Mongolia, Thailand, Japan and South Korea. We investigate how Buddhist affiliation (and religiosity when available) related to the number of children ever born, controlling for education, urbanization, union status and age. Our preliminary empirical results suggest that in many countries, Buddhist affiliation is not associated with significantly higher fertility. For instance in Thailand, Buddhism is negatively associated with fertility (among women aged 25-49), also when education and region is controlled for.

### **203. Forerunners of the Fertility Transition: Jews in Bohemia from the Enlightenment until the Interwar Times**

*Jana Vobecká, Vienna Institute of demography*

The paper studies the fertility transition and explains under which conditions its forerunners started to reduce their fertility. It focuses on Jews in Bohemia, who had low fertility rates very early on, not only in comparison with the total country population but also in comparison to Jews elsewhere in Europe. A unique set of aggregate data on population change from the late 18th century until the Shoah allows tracking the process of Jewish fertility transition in its entirety, comparing it with gentiles and interpreting it in its cultural and socio-historical context. The paper shows that Jewish fertility was limited within marriage already in the 18th century. A further sharp decrease came after 1848, when Jews acquired equal civil rights. The necessary conditions for fertility decline thus came together at this time: low mortality, upward mobility aspirations, high human capital, low religiosity, and a favorable legal and socio-economic environment.

### **203. Global Religious Demography: New Population Estimates and Age Data**

*Conrad Hackett, Pew Research Center; Marcin Stonawski, International Institute for Applied Systems Analysis (IIASA) / Cracow University of Economics; Vegard Skirbekk, International Institute for Applied Systems Analysis (IIASA); Brian J. Grim, Pew Research Center*

This paper describes the world's major religious populations in 2010. We provide new population estimates for eight religious groups: Christians, Muslims, the religiously unaffiliated, Hindus, Buddhists, members of folk or traditional religions, Jews and other world religions. We are the first to reveal median age data for each religion. We provide all statistics at the global level and for

six geographic regions: Asia-Pacific, Europe, Latin America-Caribbean, Middle East-North Africa, North America and Sub-Saharan Africa. These results are the product of a multi-year, international collaboration to evaluate and standardize data from thousands of sources to produce the best available social scientific estimates of religious populations in 232 countries and territories of the world.

### **203. Views of the Interrelationships of the Dimensions of Developmental Idealism and Family Life: Evidence from Nepal**

*Arland Thornton, The University of Michigan; Linda Young-DeMarco, University of Michigan; Dirgha Jibi Ghimire, University of Michigan*

We examine how people understand and conceptualize developmental idealism – a cultural schema that links ideas about societal and familial development. For centuries, scholars and policy makers have written that the world is dynamic, changing from traditional to modern, that modern families are causes of modern societies, that modern societies are causes of modern families, and that modern societies and families are better than traditional ones. These ideas have spread widely around the world, with the capacity for fostering change. The question motivating our research concerns the extent to which people link together the various aspects of developmental idealism as a package. Do individuals who endorse one aspect of developmental idealism endorse other aspects, or is there little relationship between how individuals evaluate the various aspects? We investigate these issues using 2008 data collected in Nepal. Our data indicate that Nepalis link some aspects of developmental idealism together but not others.

### **204. Comparative policy perspectives of happiness and parenthood**

*Arnstein Aassve, Università Bocconi; Maria Sironi, University Of Oxford; Letizia Mencarini, University of Turin Dept. of Economics & Collegio Carlo Alberto*

This paper discusses the links between parenthood, happiness and policies, taking a comparative perspective. Its motivation derives from recent analysis suggesting a positive relationship between happiness and fertility. Taking a multilevel approach, we find that parental happiness, and thus wellbeing associated with childbearing, depends on a series of country characteristics – ranging from economic prosperity, trust, social capital and gender equality. We reflect on its policy implications and highlight the fact that direct measures of child friendliness, such as the supply of public childcare – though important – appear to matter less than for instance gender equality.

### **204. National and regional trends in ideal family size in China**

*Baochang Gu, Renmin University of China; Stuart Basten, University Of Oxford*

Ideal family sizes [IFS] are useful in indicating both possible future directions of fertility in a given society as well as providing a ‘barometer’ to general societal-level attitudes towards childbearing and families. In China, an improved understanding of IFS can go some way to examining both the possible consequences of future reforms in family planning legislation and, related to this, to judge whether the country has fallen into the ‘Low Fertility Trap’ where small families become normalised.

We will present the results of a meta-review of almost 100 studies of Chinese IFS. Even after readjustment for ‘politically correct’ response bias, IFS in China are well below replacement rate in both rural and urban areas, pointing to the internalisation of the one child family. Rather than a residual of family planning restrictions, we show IFS reported in China are similar to those reported elsewhere in Hong Kong and Taiwan. This accords with much recent research which has emphasised the role of urbanisation, economic development and social change in driving fertility decline in China rather than the explicit effect of family planning restrictions.

This suggests that reform of the family planning restrictions may not have a major impact upon period or cohort TFR in China.

#### **204. Public childcare provision, attitudes and first births in Germany**

*Sandra Krapf, Max Planck Institute for Demographic Research*

Publicly provided or subsidized childcare for children under three years is rising in many European countries. This should reduce conflicts between family and work and thus stimulate fertility. However, previous studies investigating this relationship found inconsistent results. This paper examines the impact of publicly provided or subsidized childcare on individual childbearing behavior in Germany. In addition to childcare services, also childcare attitudes are considered. The central argument is that childcare provision might incentivize entry into motherhood given that women generally approve the concept of child-minding outside the family. Using discrete time hazard models, we analyze the new yearly German family panel pairfam combined with regional data for the period between 2008 and 2010.

#### **204. Slovenia: The case of a long-term co-existence of a well-developed family policy and a (lowest) low fertility**

*Nada Stropnik, Institute for Economic Research*

In the period 1995-2005, Slovenia was the country with the lowest low total fertility rate (TFR), the lowest level being 1.20 in 2003. The TFR was below 1.5 in the 18-year period from 1990 to 2007. In 2010 and 2011 it was 1.57 and 1.56, respectively, since women have been recuperating the postponed births.

For decades, Slovenia has had a well-developed family policy, aimed at enabling the reconciliation of professional and family obligations, providing equal opportunities to both sexes and a horizontal redistribution of income in favour of families with children. This is particularly true for parental leave and pre-school childcare. Notwithstanding, almost no impact of family policy on fertility has ever been observed.

This paper focuses on the factors (including family policy measures) that had influenced people's decisions to have their first, second and third child. The evaluation of family policy measures and preferences is dealt with, too. The main data source is the Slovenian survey on the impact of family policy measures, conducted in June 2010 on a representative sample of 1,013 persons aged 20-49 years. Reference is made to the results of the 2000 International Population Policy and Attitudes Survey and the 1995 Fertility and Family Survey.

#### **205. Cross-national variations in birth control of Europeans: divergence or convergence?**

*Jirina Kocourkova, Charles University In Prague*

In the late 1980s the East-West division by birth control was identified in Europe as the characteristics of women who had abortions differed sharply between the countries of Eastern and Western Europe. In the EE countries the abortion rates were high and abortion was used to limit family size once certain parity had been reached. Thus it was requested by married women with two or more children. In WE countries most women who had abortions were young, childless and unmarried. Since the early 1990s the incidence of abortions in EE countries rapidly decreased although with different intensity. As a result, cross-national variations in abortion level have been reduced by 2009. Has the East-West division remained or has a new one emerged? Can we distinguish new patterns of abortion behaviour? What was the role of birth control method in transition of reproduction patterns? The relationship between the changes in abortion and contraceptive behaviour in EU countries was studied. 21 EU members were selected for comparative analysis. Cluster analysis of birth control indicators and multivariate statistical analysis of GGS data was used to give more detailed insight into current typology of birth control. Finally, factors behind the recent diversification were identified.

## **205. Fertility, Abortion, and Contraception in Russia: Findings from Russia's First National Reproductive Health Survey**

*Howard Goldberg, Centers for Disease Control And Prevention; Florina Serbanescu, Centers for Disease Control and Prevention; Lidia Bardakova, UNFPA; Paul W. Stupp, Centers for Disease Control and Prevention (CDC)*

Since the dissolution of the Soviet Union, the Russian Federation has been characterized by extremely low levels of fertility, very high rates of induced abortion, and a lack of consistent use of effective contraception by Russian couples. These characteristics, particularly fertility rates leading to negative population growth, have been a major cause for concern in Russia. A recently completed national survey has found, however, that fertility has risen substantially while abortion utilization has fallen sharply. In late 2011, the Russia Reproductive Health Survey (RRHS) was carried out, providing Russia with its first nationally representative estimates of a wide range of reproductive health indicators. The RRHS, with a national sample of over 10,000 women, found the total fertility rate for Russia to have increased substantially, while the total abortion rate fell even more dramatically. In this paper we decompose information from the 2011 RHS and earlier data sources to analyze the interplay between fertility, fertility intentions, various aspects of contraceptive use, and other reproductive behaviors and decisions to better understand how such factors have served to increase fertility and reduce induced abortion recently.

## **205. The incidence of induced abortion in Nigeria: Levels and trends**

*Akinrinola Bankole, Guttmacher Institute; rubina hussain, Guttmacher Institute; Isaac Adewole, University of Ibadan; Olutosin A. Awolude, University of Ibadan/University College Hospital, Ibadan*

Abortion is highly restricted by law in Nigeria, yet it is commonly used to end an unwanted pregnancy. Sustained low contraceptive prevalence and increasing levels of unmet need continue to prevent women from attaining their fertility desires. Furthermore, because of their clandestine nature, many abortions take place under unsafe conditions, contributing to Nigeria's high maternal mortality ratio of 630 deaths per 100,000 live births. A landmark 1996 abortion incidence study estimated 610,000 annual abortions and 25 abortion per 1000 women. Using the same methodology: indirect estimation technique through a nationally representative survey of public and private health facilities (n=1032) and a purposeful sample of Nigerian health professionals (n=194), we update abortion estimates for 2012 at the national and regional level.

## **206. Comparative importance of the fertility model, the total fertility, the mean age and the standard deviation of age at childbearing in population projections**

*Dalkhat M. Ediev, Wittgenstein Centre, Vienna Institute of Demography and International Institute for Applied Systems Analysis*

Using empirical fertility rates and population distributions, we study comparative contributions to births' prediction errors of choices for the fertility model and of the approximation errors of three main fertility indicators (the total fertility, the mean and the standard deviation of age at birth, respectively: TFR, MAB, SDAB). Agreeing with theories of dynamic populations, we find high importance of accuracy of TFR and MAB. Yet, the role is limited in population projections of the estimates of SDAB and of the choice of the fertility model form. More attention may be paid in population projections to working out (interdependent) scenarios for TFR and MAB, while relaxing complexity of other aspects of fertility projection models. Our results suggest widening the uncertainty range for TFR in cases when the MAB projections are based on regressions on TFR or other simplified assumptions.

## **206. Comparing Forecast Methods for Birth-Order Cohort Fertility with an Application to Japan**

*Giampaolo Lanzieri, Statistical Office of the European Union (EUROSTAT); Miho Iwasawa, National Institute of Population and Social Security Research; Ryuichi Kaneko, National Institute of Population and Social Security Research; Kenji Kamata, National Institute of Population and Social Security Research*

In a cohort approach, the extrapolation may refer either to the incomplete fertility of a cohort or to the time series of the parameters of the model. By "forecasting" or "extrapolation" we mean here the capacity of a method to both complete the childbearing period of cohorts of women who have not yet reached its end and forecast the entire set of fertility rates for future cohorts, using the parameters of the model. Various methods have been proposed in the literature but, to our knowledge, there is no study in the international literature which investigates the performances of the various models for the extrapolation of cohort fertility, especially on both perspectives. Yet, this is of particular relevance for projections, especially for those with a long time horizon. This study intends to fill in this gap, comparing the pros and cons of the models listed above using Japan as case study. In addition, given the relevance which is acknowledged in the cohort fertility to the parity, the analysis will be carried out by birth order, in fact a further test on the capability of the methods to adapt to various fertility patterns.

## **206. On the Quantum of Fertility: A Bias Correction Approach Using the Slope Information** *P. C. Roger Cheng, National Central University*

Given the fact that a satisfactory estimate of cohort fertility depends crucially on an accurate prediction of the future trend of period quantum, this paper shows that one can utilize available fertility data to disclose some useful information about that trend so as to effectively correct the prediction bias occurring under the no-quantum-change anticipation. Specifically, we extract clues about both the slope and the change of slope in current quantum movements, and then exhibit a very high correlation between the slope of period quantum and the prediction bias which comes from a large number of experiments by fully utilizing the existing data from Canada, the U.S., and 23 European countries. As a result, the prediction bias can be significantly corrected based on this relationship so that a satisfactory estimate of cohort fertility is thus obtained.

## **206. Regional probabilistic fertility forecasting by modeling between-country correlations** *Adrian E. Raftery, University of Washington; Bailey K Fosdick, University of Washington*

The United Nations Population Division releases country fertility estimates and projections every two years, currently using the model of Alkema et al (2011, Demography) for total fertility rate (TFR). This Bayesian hierarchical model produces a predictive distribution of TFR for each country. We extend this model to allow probabilistic projection of the TFR for any set of countries, such as a region or trading bloc. We model the correlation between country TFRs that is not captured by the original model as a linear function of time invariant covariates, namely whether the countries are contiguous, whether they had a common colonizer after 1945, and whether they are in the same UN region. This correlation structure is incorporated into the original model's error distribution and is shown to improve the calibration of predictive intervals for the future TFR of regions.

## **208. Applying small area models to estimate mortality from birth history data: Under-5 mortality in Zambian districts, 1980-2010**

*Laura Dwyer-Lindgren, Institute for Health Metrics and Evaluation, University of Washington; Haidong Wang, University of Washington; Marie Ng, Institute for Health Metrics and Evaluation, University of Washington; Abraham Flaxman, Institute for Health Metrics and Evaluation,*

*Univeristy of Washington; Felix Masiye, University of Zambia; Emmanuela Gakidou, University of Washington*

Sub-national estimates of under-5 mortality are useful for evaluating within-country inequality, tracking progress, and identifying areas of greatest need. We estimate under-5 mortality for each of Zambia's 72 districts annually 1980-2010, using summary birth history data from censuses and complete birth history data from Demographic and Health surveys to fit a series of small area models. We consider a variety of generalized linear mixed models that differ in how spatial trends, temporal trends, and spatial-temporal interactions are introduced. All models suggest considerable heterogeneity in levels of under-5 mortality, with the worst off districts experiencing mortality risks 2-3 times as great as those in the best off districts. Distinct spatial trends are also apparent: districts in the northeast and southwest experience noticeably higher mortality than districts in the central part of the country. Progress in decreasing mortality over the past 30 years has also been variable: while there is some evidence of decline in most districts, our models suggest that a subset of districts have experienced decreases in mortality exceeding 50%.

### **208. Comparing three statistical techniques for Space-time clusters with county-level fertility data from Costa Rica.**

*Gilbert Brenes-Camacho, University of Costa Rica*

Population projections at a small area level are sensitive to random departures in temporal trends of population change components. In order to have robust trends for the county level projections in Costa Rica, the team in charge of forecasting decided to determine county clusters based on the past trends. In this paper, we compare three descriptive techniques used to build space-time clusters for the Crude Birth Rate: Functional Data Analysis (FDA), the scan statistic, and Geographically Weighted Regression GWR. GWR was the technique that yielded clusters related to the diffusion paradigm for fertility decline. However, the scan statistic provided a more parsimonious set of clusters that are more tractable for population projections.

### **208. Estimating child and infant mortality in Egypt through a Bayesian approach for small area**

*Elena Ambrosetti, Università di Roma La Sapienza; Serena Arima, Sapienza University of Rome*

In the Egyptian context, delayed fertility transition compared to neighboring countries, can be in part ascribed to the delay in the fall of infant mortality rates. Infant mortality was high in Egypt till the 1980s. Since then, infant mortality recorded significant progress: in 2001, the number of deaths per 1000 births was 38 against 97 in 1984. However differences are still significant between governorates: in urban governorates, the 2008 level is 29 deaths per 1,000 births. In rural Upper Egypt, mortality was about 39 ‰. No previous studies had attempted to estimate infant and child mortality in Egypt for small geographical areas. Strong socio-economics differences and inequalities exist between urban and rural setting, Upper and Lower Egypt and even between small area in the same region or city. Those differences justify the need to calculate infant and child mortality rates at the local level. We will account for this problem using a Bayesian hierarchical model for small area: model-based estimators will be derived and their precisions compared with alternative estimators proposed in literature. We use data from Egyptian Demographic and Health Surveys (1995 and 2005), Egyptian population register and Egyptian Population and Housing Census (1996 and 2006).

### **208. Rural health facility and Institutional birth: A study in composite index formation and spatial modeling**

*Rachana Patel, International Institute for Population Sciences (IIPS); Laishram Ladusingh, International Institute for Population Sciences*

This study examines the spatial relationship to the maternal-health-care utilization focusing on institutional births which direct related to maternal-mortality. Empowered Action Group (EAG states) was studied which is socio-economically weak and DLHS-3 data was used. Some indices were prepared for the purpose like infrastructure adequacy at public-health-centres and accessibility index. Reliability test was performed to all the facility indices prepared and found to be good ( $0.7 < \alpha < 1.0$ ). Correlation-matrix shows the Health personnel adequacy index were highly correlated with physical-infrastructure-index at PHC. Equipment adequacy, essential drugs clustering is found significant in western districts comprising districts of western Rajasthan, Middle MP and southern UP. Manpower-adequacy is also clustered significantly (high-high) in some districts of Orissa. Accessibility attributes were taken for the LISA cluster map to show the spatial pattern of the event. Empirical Bayes distribution of the statistic also showed there is auto correlation for village had all weather road connectivity to PHC in the districts. Skilled ANM, manpower availability and MCH laboratory services showed spatially significant covariates at PHC, whereas spatial connectivity (<5km) and distance to PHC played important role for the institutional births.

### **210. Incongruence and differentials in reporting child death by the couples in India**

*Kumudini Das, PILLAI'S COLLEGE OF ARTS, COMMERCE AND SCIENCE, NAVI MUMBAI; Kailash Chandra Das, International Institute for Population Sciences (IIPS), Mumbai*

Most of the demographic researches on fertility, reproductive health and contraception focus on females of particular age group especially who are in their reproductive period. Important demographic indicators like fertility, contraception and mortality etc. are estimated on the basis of reporting of the eligible female respondent. But how reliable is the reporting of the wife regarding death of the child? Recently the focus of demographic and health surveys has shifted from being woman centric to couple centric where the couple is taken as a single unit. The available literature on the subject is also scanty. Hence, this particular study makes an attempt in exploring the matching and mismatch among couples in reporting of the death of the child. The present study analyses the couples information by using a nationally representative sample size of the third round of National Family Health Survey (NFHS-3, 2005-06). Information regarding death is collected both from the husband as well as wife. In India mismatch in reporting of total children died is almost 24 percent of which 14 percent women reported less than their husbands and remaining 10 percent reported higher than their husbands.

### **210. Origins of Sex Differences in Early Age Mortality in Human Populations**

*Barthelemy Kuate Defo, Université de Montréal; Roland Pongou, Brown University; Zacharie Tsala Dimbuene, Statistics Canada*

Demographers have long established that sex ratio in all births in human populations, almost without exception, depicts a slightly larger percentage of boys born alive than girls. Notwithstanding the poorly understood nature of the male predominance at birth and male excess mortality at early as well as older ages, that of the influences on differentials mortality between males and females at early ages remains debatable. A fundamental unresolved question in demographic research is the relative importance of biological, social, and ecological factors in determining sex gap in infant and child mortality. The objective of this paper is to develop a new decomposition technique and explanatory models that will allow partitioning sex gap in infant and child mortality into its constituent components of child biology, social factors and ecological conditions. This methodology will be applied to discrimination-free societies as well as to societies in which sex-selective discrimination exists. We will use large samples of twins from nationally representative populations in 225 national populations in 87 countries from Africa, Asia, Latin America and Europe. These aggregate and individual data capture varying social, demographic, and epidemiologic circumstances over a historical period from 1985 to 2011.

## **210. Sex Differences in U5MR: Estimation and identification of countries with outlying levels or trends**

*Leontine Alkema, National University of Singapore; Fengqing Chao, National University of Singapore; Cheryl Sawyer, United Nations*

Under natural circumstances, the ratio of the male to female under-five mortality rate is greater than one. However, deprivation of girls' access to health care or proper nutrition could lead to distorted ratios of under-five mortality. Monitoring of mortality by sex is challenging because of issues with data availability and quality. Moreover, the sex ratio is expected to vary with under-five mortality, which makes it challenging to define "expected levels". We present a Bayesian hierarchical model to estimate the sex ratio of under-five mortality for all countries. In addition, we estimate the relative difference between national sex ratios and expected sex ratios based on the global relation between under-five mortality and the sex ratio. All estimates include an uncertainty assessment to enable assessments of whether differences between countries or within countries over time are significant or highly uncertain. Preliminary results suggest that girls may be disadvantaged in several countries.

## **210. Sex Differentials in Under-five Mortality in Sub-Saharan Africa**

*Sunday A Adedini, University of the Witwatersrand, South Africa & Obafemi Awolowo University, Nigeria; Clifford Obby Odimegwu, University of the Witwatersrand; Ayo Stephen Adebowale, University of Ibadan; Joshua Odunayo Akinyemi, College of Medicine, University of Ibadan. Ibadan, Nigeria*

There is no consensus in the literature on the male-female differentials in childhood mortality. In addition, most of the relevant studies on this subject are old. This gives credence to the need to examine the current sex differentials in childhood mortality. This study examines male-female differentials in under-five mortality in sub-Saharan Africa. Data for this study came from the latest Demographic and Health Surveys in eight sub-Saharan African countries. Analysis was restricted to births in the five years preceding the survey. Data were analysed using descriptive, chi-square and Cox-proportional hazard model. Results showed that risks of under-five death were significantly lower for females than for males in Ethiopia (Hazard Ratio (HR): 0.83, CI: 0.73-0.95,  $p=0.008$ ), Nigeria (HR: 0.87, CI: 0.82-0.94,  $p=0.00$ ), Zambia (HR: 0.78, CI: 0.66-0.92,  $p=0.004$ ) and Zimbabwe (HR: 0.78, CI: 0.63-0.96,  $p=0.017$ ). Adjusted HR indicates higher risks of under-five death for females than for males in Kenya (HR: 1.27, CI: 0.77-2.03,  $p=0.35$ ). This suggests sex discrimination in child care in favor of boys in Kenya, since previous findings had attributed excess female mortality to variations in health care and diet but not to genetic factors. Elimination of discrimination against girl child is likely to lead to further reductions in under-five mortality in Kenya

## **211. Attitude towards sexual control among women in conjugal union and its implication for HIV infection in Mahikeng, South Africa**

*Godswill Nwabuisi Osuafor, North-West University; Akim Jasper Mturi, North-West University (Mafikeng Campus)*

There is evidence that husbands pose the greatest risk of infecting their wives with STIs and HIV in Africa. The main purpose of this paper is to assess the attitude towards sexual control among married women. Factors influencing the sexual control of these women are also investigated. A survey was recently carried out in Mahikeng, South Africa. A total of 568 married or cohabiting women aged 18-49 years took part in the survey. The survey collected two dependent variables based on the questions can women demand for sex? and can women reject sexual intercourse? The logistic regression analysis was used. 81% of respondents reported that a married woman can demand sex from her husband. However, a significant proportion of married women (41%) do not

approve that married women can reject sexual intercourse with their husband under any circumstances. This group of women needs serious consideration in terms of policy. Whilst variables that are significantly related with rejecting sex include age, nature of union, education, occupation, and number of living children, only age and nature of union were related to demand for sex. Women empowerment initiatives should be considered as a means to curb HIV/AIDS in this society.

### **211. Sexual behaviour and HIV prevalence trends among residents and non-residents in a general population in rural South Africa**

*Nuala McGrath, University of Southampton; Jeffrey W Eaton, Imperial College London; Victoria Hosegood, University of Southampton; Marie-Louise Newell, Africa Centre*

Sexual behaviour and HIV prevalence trends reported in overall study populations may mask different sexual behaviour and HIV prevalence changes in specific sub-groups. One group of particular interest are adult migrants from rural households. In this paper, we compare and contrast trends in sexual behaviour and HIV prevalence by residential status in a rural South African community 2005-2011. We use repeated cross-sectional sexual behaviour and HIV data available in the Africa Centre Demographic Information System (ACDIS). Multiple imputation methods and inverse probability weighting are used to adjust for missing data and selection bias respectively. Generally, trends in sexual behaviour indicators are in the same direction for residents and non-residents although sexual risk behaviours remain higher in non-residents compared to residents after adjusting for age. Marked differences are observed in risk behaviours by gender. Non-resident women are more likely than resident women to report condom use at last sex with their regular partner; the opposite is observed in men. There is no significant difference in HIV prevalence by residency status for men or women. In this paper we also discuss the extent to which current residential status may mask complex histories of migration.

### **211. Gender disparity in HIV seroprevalence and associated gender variables: a population-level analysis of the association between g**

*Katherine E Harris, University of Southampton*

In light of the increasing ‘feminisation’ of the HIV epidemic, this paper aims to increase understanding with regard to the factors which help shape the context of vulnerability in sub-Saharan Africa. Relatively few studies have examined the relationship between gender-related variables and HIV prevalence at the population level and existing studies have reported conflicting results, focus on relatively few issues, and are usually limited to one setting. The sex ratio in HIV prevalence has received even less attention despite substantial variation between countries. This paper focuses mainly on gender disparity in the 15-24 age group as this is not only the age group in which women are argued to be particularly vulnerable, but also in which gender disparity is most pronounced. The influence of several gender-related variables is explored using partial correlation coefficients and linear regression. The analysis controls for a number of variables which may influence the ratio of female to male HIV prevalence including the maturity of the epidemic, prevalence of other STIs and gender differences in accessing ART as well as other social and institutional differences.

### **212. Intra-household Resource Allocation in Rural Africa: Evidence from a Randomized Field Experiment**

*Patrick Asuming, Columbia University in the City of New York*

I use a novel experiment to study intra-household allocation of resources in rural northern Ghana. In an experiment that provided subsidies towards the purchase of health insurance, the total value of the subsidies were not enough to enroll all household members. 200 households were randomly assigned to receive no subsidy vouchers, subsidy vouchers that specified a subsidy amount for

each household member or a subsidy voucher that allowed households to decide which members to enroll to allocate. Comparison allocation under the two types of vouchers shows that, when allowed to allocate subsidy amounts, households enroll more boys than girls by 11.7 percentage points. This gender differential is concentrated in children aged 7-17 years. I find evidence in support of higher labor market participation as motive for this allocation pattern. Among, children aged 7-17 years, boys are 3.7 percentages points more likely to participate in the labor market as farm workers. These results suggest that households may be investing more in boys because of their contributions to household farm output.

### **212. Is the Cohabitation-Marriage Gap in Money Pooling Universal?**

*Dana Hamplova, Institute of Sociology ASCR; Céline Le Bourdais, McGill University; Evelyne Lapierre-Adamcyk, Université de Montréal*

This paper contributes to the comparative research on the money pooling practices among married and cohabiting couples. Specifically, it compares married and cohabiting couples in the francophone province of Quebec and in the rest of Canada. These regions provide an excellent opportunity for comparative research given their profound socio-cultural differences. The levels of cohabitation in English speaking Canada are moderate whereas Quebec is the society with the highest proportion of cohabiting couples in the world. Moreover, the two regions differ in their legal systems (Common Law principles versus Civil Code) and regulation of cohabitation. The analysis is based on the 2011 General Social Survey that includes a set of questions on the money management and income pooling in the household as well as the full conjugal and fertility histories of respondents.

### **212. Living standards after divorce: does alimony offset gender income inequalities?**

*Carole Bonnet, Institut National d'Études Démographiques (INED); Anne Solaz, Institut National d'Études Démographiques (INED); Bertrand Garbinti, Crest-Insee, PSE*

Marital separations and divorces have dramatically increased during the last decades. The way they affect the economic situation of both men and women in an asymmetric way has been analysed in the literature (Uunk, 2004). However two points remain unexplored. Most studies on living standards after divorce do not take well into account child and spousal support payments. Second, in the case of divorce, it is often difficult to recover individuals who move, and then to compare the economic situation of both partners following the separation. The French administrative income-tax dataset we use enables us to overcome these two difficulties. We select all the divorcees whose divorce occurred in 2009 (around 65,000 couples), and we matched them with the previous year and the year after in order to compute the living standard variation. We then analyse to what extent alimony (reported in the tax return) do play their role in balancing living standards between the two spouses after divorce, offsetting possible economic inequalities. This analysis would be a way to assess the efficiency of the child support scale recently introduced in France. We also investigate the income sharing between the two spouses before and after the divorce, using difference in differences methods and Blinder-Oaxaca decomposition.

### **212. The incremental time cost of children in different fertility contexts: evidence from France and Italy**

*Ariane Pailhe, Institut National d'Études Démographiques (INED); Anne Solaz, Institut National d'Études Démographiques (INED); Maria Letizia Tanturri, University of Padua*

The rising cost of children is considered a reason for declining fertility. This paper assess the incremental time cost of children for Italian and French couples', according to children's number and age. Using the Italian Time Use Survey (2002-03) and the French one (1998-99) we select a subsample of respectively 4,827 and 2,417 either married or cohabiting couples: 22% of them are childless, while the others have at least a child under 13 years old. As an increase in parents' total

work means a corresponding compression of both pure leisure and time for personal care, the marginal time cost of children is calculated by comparing the total daily workload (paid and unpaid work) of couples with and without children. Each cost is measured first on the couple and secondly on each partner in a gender perspective. We run three separate OLS models on time dedicated to childcare, to unpaid work and to total work. Controlling for a plurality of covariates, results seem to corroborate the hypothesis that Italian children are more time-intensive than the French ones ( especially if they are infant and higher parities) and that Italian women bear a higher part of these costs than the French ones.

**213. Building Uninhabited Villas and Strong Ties: US Remittances to West Bank Villages**  
*Randa B Serhan, American University*

Estimated at \$399 in 2012, remittances are considered “untapped sources for development funding” by the World Bank and the G20. Beyond the contentions about communities using the monies for consumables instead of development, there is recognition that conflict zones need remittances to stay afloat. The West Bank is one of those places. From a development perspective, the West Bank remains stagnant, yet for West Bank Palestinians they consider themselves involved in political resistance against the Israeli occupation by building homes and supporting relatives in their everyday lives. The arguments made in this paper are based on data collected in an ethnographic study conducted in New York and New Jersey between 2001-2008. Using Viviana Zelizer and Charles Tilly’s “Relations and categories,” this paper contends remittances do not have to produce dependency or corrupt intimate relationships when those involved imbue the financial transfers with positive meaning. By tracing the informal mechanisms devised to send remittances, it is concluded that such mechanisms and not only the dollar amount bolster West Bank Palestinian networks and community pride, and build commitments among the American-born.

**213. Effect of Labour-Out Migration on Farm Input use in Banana and Legume Systems in Great Lakes Region of Central Africa**

*Ochieng Justus, University of Kassel; Beatrice Knerr, University of Kassel*

Migration and associated remittances hold a great potential to enhance agricultural productivity in low-income countries. There are two aspects to be considered when assessing their impact on the migrant families’ farm development: First, migration implies labour loss, thus reducing the household’s capacity to respond to labour demands. Second, out-migration of one or more of its members gives the household the opportunity to earn remittances that help to overcome labour shortfalls and provide capital inputs for improving agricultural production. Although of utmost relevance for the region, this area has been insufficiently investigated in Central Africa, and especially in the Great Lake region. Therefore, the objective of this research is to determine the impact of labour out-migration on agricultural intensification in Rwanda and the Democratic Republic of Congo. Preliminary results indicate that there is a significantly positive effect on the employment of hired labour and on the application of manure which is a result of increased livestock keeping in migrants’ households. Other inputs, like chemical fertilizer and improved seeds, do not seem to be significantly affected. This suggests an overall positive impact of out-migration on farm development.

**213. Globalization, Migration and Remittances: A Study of Indian Emigrants in Middle-East.**

*Naresh Kumar, Central University of Gujarat*

Today, in the era of globalisation Indian diasporic population is one of the major contributing populations in the world’s workforce. International migration is an ever- growing phenomenon that has important development implication for both sending and receiving countries. For sending

country, migrant's remittances leading the increased income, poverty reduction, improved health and education outcomes, and promote economic development. This paper mainly examine the role of Indian immigrants in GCCs and their remittances in the context of development impact of place of origin countries i.e. India. It is estimated by the Govt of India, 25 million Indian diasporic populations are living across the different of world. It constituted as NRI, PIO, and OCI. Out of them approximately 6 million are working as skilled and semi-skilled/unskilled labourer in the gulf region. About 95 per cent them are belonging semi-skilled and unskilled workers. GCCs countries are the main contributing source of this remittance India rather than other. Among the world's top 20 countries in terms of receiving remittances, India stands the first position in 2010. This paper also analysed the state wise Indian emigrants' data as well as the trend of Indian migrants' communities in the Gulf countries.

#### **214. Inclusiveness of Indian Economic Growth and Socioeconomic Inequalities in Regular Employment in India: Changes over Time and Across Regions**

*Ashish Singh, Azim Premji University; Upasak Das, Indira Gandhi Institute of Development Research (IGIDR); Tushar Agrawal, Indira Gandhi Institute of Development Research (IGIDR)*

India achieved unprecedented economic growth since the early 1990s. Questions however are raised about India's ability to distribute the fruits of economic growth equally among individuals belonging to different socioeconomic groups. Using data from nationally representative employment and unemployment surveys, this paper explores the inclusiveness of Indian economic growth by looking at the changes in socioeconomic inequalities in regular employment over the period 1993-94 to 2009-10. Our findings reveal that, at the all India level, socioeconomic inequalities in regular employment increased minutely by 0.2 percentage points (from 39.9% to 40.1%) during 1993-94 to 2009-10. However, the changes at the regional level are mixed. However, the changes at the regional level are mixed. Regions of North, Central and East show a decrease against an increase in Western and North Eastern regions. In Southern region the socioeconomic inequalities in regular employment have remained almost same.

#### **214. Mesure de la pauvreté relative en Nouvelle-Calédonie : un apport à l'évaluation de la politique de rééquilibrage**

*hadj laure, Centre Population et Developpement (CEPED)*

Située dans le Pacifique Sud, la Nouvelle-Calédonie est un pays d'outre-mer (POM) développé. Les inégalités sociales et économiques constituent un enjeu social, économique et politique fort. Pour y faire face, depuis 1989, la Nouvelle-Calédonie est engagée dans une politique de développement spatio-ethnique, nommée 'rééquilibrage'. L'objet de cette politique est de réduire les inégalités économiques, sociales et culturelles entre les provinces Nord et Iles Loyauté, majoritairement Kanak, et la province Sud composée principalement de non Kanak. En vingt ans de politique de rééquilibrage, les écarts de santé et d'éducation se sont fortement atténués. Alors que les écarts économiques se maintiennent. La principale raison est l'existence de deux modèles économiques aux finalités différentes qui coexistent : le modèle économique de subsistance propre au monde kanak et le modèle marchand des allochtones. L'objet de ma communication est de contribuer à l'évaluation de la politique de rééquilibrage en menant une étude sur la pauvreté relative des ménages en Nouvelle-Calédonie. Ma démonstration s'appuie sur l'exploitation des enquêtes budget consommation des ménages de 1991 et 2008.

#### **214. Recast(e)ing Inequality: Residential Segregation by Caste across City Size in India**

*Gayatri Singh, Brown University; Trina Vithayathil, Brown University*

Against the backdrop of India's transformation from a majority rural to an increasingly urban society, this paper seeks to understand how patterns of inequality vary across city size. We use ward level data from the Indian Census to examine residential segregation by caste in small,

medium and large cities within the state of Kerala. Restricting the analyses to cities in one region allows us to control for the tremendous socio-political diversity in India. Our findings resonate with other recent scholarship on caste inequalities in urban India, with small cities demonstrating the highest degree of residential segregation by caste. In contrast, larger cities show comparatively lower levels of residential segregation; perhaps due to intermixing of diverse linguistic, ethnic and regional identities that reconfigure caste relations and diminish caste based inequalities.

#### **214. Tunisia's Jasmine Revolution: A Spatial Demographic Analysis of Protest, Violence, and Voting Patterns**

*Nicholas E Reith, University of Texas at Austin*

In the wake of the past two years of popular uprisings and revolutions in the Arab region, three theoretical explanations with a major demographic component have gained prominence. These three "new" theories posit 1) a youth bulge, 2) demographic disparities, and 3) the role of digital media, respectively as likely causes of revolution and of the success of Islamist parties in elections. Using Generalized Spatial Two-Stage Least Squares Regression to analyze sub-national data from Tunisia, preliminary results indicate that these three phenomena are not statistically significant predictors of the occurrence of protest, the timing/duration of protest, or the district vote percentage for the main Islamist party "Ennahdha." Further analysis with both time and spatial dimensions will clarify other demographic factors that seem to be linked to protest, violence and vote outcomes, including government marginalization and women's demographic factors.

#### **215. Future smoking-attributable and all-cause mortality: its sensitivity to indirect estimation techniques**

*Lenny Stoeldraijer, Statistics Netherlands; Fanny Janssen, University of Groningen*

Smoking has been the most important non-linear determinant of mortality in low-mortality countries. With changes in smoking behaviour, projections of smoking-attributable and of all-cause mortality including smoking become more important, especially for health care programs and insurance. However, these projections might be sensible to the indirect techniques to estimate smoking-attributable mortality being used.

We estimate future smoking-attributable and all-cause mortality and analyse its sensitivity to different indirect techniques for estimating smoking-attributable mortality.

Future smoking-attributable mortality is obtained by applying different indirect estimation methods to projected lung cancer mortality, e.g. Peto-Lopez and, Preston-Glei-Wilmoth methods. Lung cancer mortality rates are extrapolated using age-period-cohort analysis. Non-smoking related mortality is projected using the Lee-Carter model.

Smoking-attributable mortality will further decline for males and first increase but then decline for females. The different indirect estimation techniques have an effect on smoking-attributable mortality levels and its age structure. Furthermore, they will lead to higher differences in projected smoking-attributable and all-cause mortality for women because of their shorter history in smoking.

#### **215. Interpreting and Projecting Mortality Trends for European Countries by Using the LD Model**

*Futoshi Ishii, National Institute of Population and Social Security Research; Giampaolo Lanzieri, Statistical Office of the European Union (EUROSTAT)*

Assumptions on future mortality play a key role for pension, health care and long-term care policies: the understanding of mortality trends is therefore of paramount importance for projections purposes, especially for the forerunners countries. In general, improvement for adult mortality is understood as declining of the mortality curve. However, Ishii (2008) has showed how adult mortality improvement could be better modelled by the shift-type than by decline-type

model, such as the Lee-Carter model (Lee and Carter 1992), and he has proposed the Linear Difference (LD) model. In this study, we apply the LD model to the adult mortality for several European countries to analyse the trends of mortality improvements. Through the comparison of the parameters for the LD model between countries, we try to elucidate the peculiar features of mortality in Europe, to be used for projections purposes. These characteristics will be also compared to those of Japan, a benchmark country in the field of mortality, and the projected trends compared to those from other sources. Given the variety of mortality patterns existing in Europe, this study is also an important test about the performance of the LD model.

### **215. A comparison of the accuracy of coherent mortality forecasts for subpopulations defined by sex and state – which matters most?**

*Heather Booth, Australian National University*

When mortality forecasts for subpopulations are treated as independent, historic relationships among subpopulations may not be reflected in the forecasts. The product-ratio method of coherent forecasting (Hyndman, Booth and Yasmeen, *Demography*, online 2012) takes account of the relationships among subpopulations based on a single criterion such as sex or state. The coherent forecasts have been shown to improve overall accuracy and to equalise accuracy across subpopulations. The aim of this paper is to compare the accuracy of mortality forecasts when the subpopulations are based on sex and state (or country). The product-ratio method is applied to male and female populations of a group of  $n$  states, producing mortality forecasts for  $2n$  subpopulations defined by sex and state. Two forecasts per subpopulation are made: the first set are sex-coherent forecasts for each country, while the second set are country-coherent forecasts for each sex. The accuracy of the two sets of forecasts are compared. Examples include four Nordic countries (Norway, Sweden, Denmark and Finland), three constituents of the UK (England & Wales, Scotland, Northern Ireland) and four states of Australia.

### **216. La fécondité adolescente et parcours de vie - Etude biographique de la transition à l'âge adulte au Mexique**

*Julie Baillet, Université Paris Ouest Nanterre La Défense*

Le taux de fécondité adolescente au Mexique est en légère baisse depuis les 40 dernières années, mais une baisse très faible concernant le taux des adolescentes comparées aux autres groupes d'âge de femmes. Ce travail examinera tout d'abord à travers une perspective biographique les facteurs corrélés à la fécondité adolescente dans le but de comprendre le maintien d'un taux élevé de fécondité parmi les adolescents en milieu urbain. Dans un deuxième temps, nous insisterons sur les conséquences de l'arrivée d'un premier enfant pendant l'adolescence en zone urbaine sur la trajectoire de vie des individus, dans le contexte mexicain. Nous nous focaliserons sur les conséquences sur la vie reproductive, la trajectoire matrimoniale et migratoire des femmes, mères adolescentes. Cette analyse se place dans une perspective biographique et invite à la comparaison entre plusieurs générations de femmes. Nous utiliserons l'enquête biographique « Encuesta demografica Retrospectiva 2011 », qui est composée d'un échantillon de 2840 personnes de 3 générations différentes : 1951-1953, 1966-1968, 1978-1980, en contexte urbain. De plus, nous appuierons sur l'analyse un corpus de 20 entretiens semi-directifs réalisé en 2013 auprès de femmes vivant dans la ville urbaine et frontalière de Tijuana, dans l'Etat de Basse-Californie.

### **216. Adolescent and youth fertility and social inequality in Latin America and the Caribbean: what role has education played?**

*Jorge Rodriguez, CELADE-Population Division of ECLAC; Suzana M Cavenaghi, National School of Statistical Science at The Brazilian Institution of Geography and Statistics - ENCE/IBGE*

According to the MDG monitoring system, Latin America and the Caribbean is the region that presents the highest adolescent and youth fertility rate (for women aged 15-19), only behind Sub-Saharan Africa, and last decade several countries had an increase in this rate. Besides presenting high level and resistance to the decline, youth fertility was at concern due to the large social inequality associated with it, since the probability of becoming a mother between ages of 15-19 years old in the poorest quintile was threefold compared to the wealthiest quintile. Last decade a number of countries have shown a decline in fertility and motherhood at young ages. The objective of this paper is to present a systematic inquiry regarding the trends of fertility and motherhood at adolescent and young ages and its social inequality in Latin American countries. Additionally, given the theoretical and political importance of education in adolescent reproduction, it aims to determine whether the decreases in fertility rates are due to direct and indirect impacts ("composition effect") of the advance in education. The results allow for a better prediction of the future of fertility indicators and its inequalities in the region that are invaluable for promoting public policies based on rights.

### **216. Fécondité des adolescentes en Asie : Diversités des profils**

*Ndeye Binta Dieme, Agence nationale de la statistique et de la démographie du Sénégal; Cheikh Tidiane Ndiaye, Agence Nationale de La Statistique Et de La Démographie; Tougma Olga, sans emploi*

L'étude de la fécondité des adolescentes en Afrique Subsaharienne a révélé la diversité des traditions et des pratiques en matière de nuptialité et de fécondité. Ces facteurs sont à l'origine des comportements de situations très diverses selon les pays. En effet, des écarts importants sont généralement observés chez les adolescentes, ce qui n'est plus le cas des femmes adultes ou celles ayant terminé leur vie féconde. L'objectif de cette étude est de mener une analyse comparative entre les pays du continent asiatique, étant donné que, comme l'Afrique, ces pays se caractérisent, pour l'essentiel, par une situation de sous développement et des disparités très importantes du point de vue économique. L'étude distinguera d'une part, les pays d'Asie du Sud de ceux de l'Asie de l'Est et du Pacifique, le moyen Orient étant le plus souvent rapproché à l'Afrique du Nord. Bien au-delà de l'approche comparative, l'examen du comportement de fécondité des adolescentes vise à montrer que la fécondité précoce en Asie est associée à différents modèles de fécondité de jeunes mères en dépit de l'affranchissement au hasard (préférence pour les garçons), souvent à l'œuvre dans cette partie du monde.

### **216. Levels , Trends, Determinants and Consequences of Adolescent Pregnancy in India**

*Shraboni Patra, International Institute for Population Sciences (IIPS); Rakesh Kumar Singh, International Institute for Population Sciences (IIPS)*

Early marriage of young girls leads to adolescent pregnancy and motherhood in India. The present study will focus on the present trend and level of adolescent pregnancy in India and to identify the determinants and consequences of adolescent pregnancy by women's background characteristics. Three different time period data, District Level Household and Facility Survey-I (i.e. DLHS-I in 1998-99), DLHS- II (2002-04) and DLHS- III(2007-08) are used. Bivariate and multivariate analyses are used.

Adolescent pregnancy is slightly declined from DLHS-I to DLHS-III . Higher level of women's education and exposure to mass media are associated with lower level of pregnancy. Religious affiliation and status in socioeconomic hierarchy have significant role in determining adolescent pregnancy among women.

Policies and awareness programs against child marriage and marriage at below the legal age are required to be implemented strictly.

### **217. Educational outcomes of children in primary grades in Andhra Pradesh, India**

*Chandrashekhar Chandrashekhar, International Institute for Population Sciences; Bornali Dutta, International Institute for Population Sciences, Mumbai*

The study aims to explore educational performances of children in the primary grades in Andhra Pradesh, India. For this, the study uses data from the Young Lives research. The study used bi-variate analysis to examine the status of educational performances of children; and logistic regression analysis to find out factors responsible for school performances. Educational performances have been examined using the Peabody Picture Vocabulary Test results separately for reading, writing and mathematical abilities. The preliminary analysis shows that large percentage of boys and girls are not able to read and write in the primary grades. But, their mathematical abilities are relatively better than reading and writing. The logistic regression analysis results show that along with other variables boys with reference to girls; standard BMI of children with reference to low BMI; children getting mid-day meal in schools with reference to not getting; economic activities of children with reference to not working children ; and children in grade 2 and 3 with reference to grade 1 are statistically significant predictors for better reading, writing and mathematical abilities. Mother's education, middle and rich class are also important determinants of reading and writing.

### **217. Family Background and Its Impact on Children's Academic Performance**

*Xiaofei Wang, Peking University*

This paper primarily examines the interrelationships connecting family background and students' academic attainment. Based on the questionnaire survey conducted in 6 senior high schools in Harbin, the capital of Heilongjiang Province in northeast China, the sample consists of 2028 senior high school freshman. The findings suggest that the differentiation of social stratification between families in senior high school education is embodied in student's academic attainment. The advantaged classes (such as the administrator group, the middle- manager group, and professionals and technicians group) contain significantly larger resources in economic capital, cultural capital, and parents' emotional involvement in education than the disadvantaged (such as blue-collar worker group, skilled industrial worker group, and peddler group), which indirectly affects students' performance in exams. A further analysis indicates the way how family structured variables, including family's cultural capital, economic capital affect the academic achievement. Besides, this paper explores the extent to which family process variables, including parental educational expectation, family interaction, parents' emotional engagement in education, and behavior supervision, have power to predict academic achievement between different classes.

### **217. Gender Gap in Educational Performance and Achievement in rural China: Evidence from Sibling Data**

*Li-Chung Hu, University of Pennsylvania*

Do parents invest more in sons than in daughters in rural China with strong tradition of son preference and differentiate the educational outcomes across children within families? Prior research suggests that girls have lower educational attainment than boys across families in China. However, existing research primarily relies on sample from urban families with only one child and pays little attention to rural families, normally have more than one child. In addition, sample from one child family is hard to know how parents allocate resources within families, since the only child expectably receives all the resources, but the rural child has to compete with their siblings. Therefore, we have little knowledge about gender differences in educational outcomes in rural China and how parents allocate the resource across children This research aims to explore the gender differences in educational outcomes and how parents allocate resources within families in rural China by using unique sibling data from the Gansu Survey of Children and Families (GSCF). Preliminary suggests that there is no difference in educational attainment, but sons outscore their

sisters in test scores. The next step of this research is going to explore how parental investment reinforces the gender differences in educational performance.

### **217. Youth education and learning in 21st century China: Disentangling the impacts of migration, residence and Hukou**

*Lucy P Jordan, The University of Hong Kong; Qiang Ren, Peking University; Jane Cecelia Falkingham, University of Southampton*

Child development is an important predictor of later life course achievements including academic and labour market success, and in recent years increasing attention has focused on the relationship between child development and life course trajectories in low and middle-income countries. This study uses data from the first wave of the Chinese Family Panel Study (CFPS) collected in 2010 to examine the relationship between parental labour migration and educational outcomes for youth. The historically uneven development across China has contributed to differentials between the urban and rural populations. Labour migration may contribute to decreasing these inequalities. The paper examines the contribution of parental labour migration to explaining variation in three educational outcomes, school pacing, math and verbal achievement. Multivariate regression models are estimated to examine the contribution of individual, household and community characteristics to explaining variation in the outcomes measures highlight the relationships between migration, residence and Hukou. First, the urban Hukou advantage is not universal with observed differences only for language scores. Second, youth living in rural households with one or more migrant parents are more likely to have higher math scores compared to youth in other rural households.

### **218. Consanguinity and intimate partner violence in Egypt and Jordan**

*Jinan AR Usta, American University of Beirut*

Consanguinity is still common in the Middle East. This paper examines the relation between consanguinity and intimate partner violence (IPV). The Demographic and Health Surveys in Egypt (2005; n=5,240) and Jordan (2007; n=3,444) and binary logistic regression models were used to assess this association. IPV, namely physical, emotional and sexual violence, during the past year was fairly similar in both countries. Physical violence was 18% in Egypt and 12% in Jordan; emotional violence was 10% in both countries; while sexual violence was lower at 6% in Jordan and 4% in Egypt. Jordan was having a higher rate of consanguinity (39%) as compared to Egypt (33%). Findings show significant association between consanguinity and experience of emotional, but not physical or sexual, IPV during past year in both countries. Duration of marriage, education, and wealth were also found to be important determinants. Policy implications of the findings will be discussed.

### **218. Examining Nonconsensual Sex and Risk of Reproductive Tract Infections and Sexually Transmitted Infections among Young Married Women in India**

*Ajay K Singh, Population Council, India*

This study analyses a cross sectional data on married women (15-29 Years) to examine their perception on sexual rights, gender roles and its association with experience of sexual & physical violence and sexual health problems. 80% women reported experiencing coercive sex by husband ever in their life time. Of this 55% ( $p<0.05$ ) reported coercive sex during last 12 months; 49% ( $p<0.05$ ) reported physical violence and 71% ( $p<0.05$ ) reported mental violence from their husband. Among the women who experience sexual violence (ever), 44% had at least one STD symptoms during the last 6 months compared to 27% who did not experience ( $p<0.05$ ) and 59% ( $p<0.05$ ) of women reported problems during menses. The odds ratio shows that women's perception that 'If a woman is married then she should be ready for sex with her husband

whenever he demands' is the most significant predictor of coercive sex followed by inter spousal communication.

### **218. Fécondité et premières violences conjugales faites aux femmes : le cas du Cameroun.**

*Alice Jacqueline Azebaze Kagou, Independent Consultant*

Au niveau mondial, au moins une femme sur trois a déjà été battue par son conjoint (UNFPA, 2000). Au Cameroun les violences conjugales physiques ont eu lieu très tôt après l'union soit 76% cinq ans après la date de début de l'union (EDSC-III, 2004). Les questions relatives à la fécondité de la femme sont souvent à la base de ces violences. Ainsi, la non procréation ou la procréation au dessus des moyens du couple peut engendrer des violences conjugales physiques. Notre propos se veut donc de savoir si la survenue d'un enfant ou la venue de plusieurs enfants dans un court délai est une source de tensions dans le couple ou une source d'union étroite dans ce dernier au Cameroun ? Pour à cette question les données utilisées sont celles de la troisième Enquête Démographique de Santé du Cameroun réalisée en 2004. Les méthodes d'analyse de survie consistaient à faire une analyse descriptive (courbes de Kaplan Meier) et une analyse explicative (régression de Cox). Le principal résultat attendu est que dans un contexte de pauvreté, une femme à forte fécondité est plus exposée à la violence conjugale physique.

### **218. Gender dynamics in the Palestinian society: Domestic and political violence**

*Memmi Sarah, Centre Population et Développement (CEPED); Annabel Desgrees Du Lou, Ceped*

Several studies have shown how political conflict can lead to the "normalization" of violence within a society, increasing domestic violence against women. We analyse here the levels and determinants of domestic violence in the Palestinian society, assessing the extent to which patriarchy and Israeli occupation are major determinants of this violence. We use data from the Palestinian Health Survey (2006) database on cases of violence reported by married women (5291) and on their attitudes towards violence. Our first result is that the probability of accepting violent behavior is significantly related to the experience that women themselves have of domestic violence (OR=1.48[1.10-1.99] for the acceptance of violence among respondents who experienced violence from their spouse vs those who did not experience this domestic violence). Second, the probability of accepting domestic violence and to report acts of violence is significantly associated with exposure to political violence: women who live in the areas most affected by political violence and mobility restrictions are more likely to report having experienced violence and to accept it; their households also suffer from economic insecurity. Thus, the violence experienced by the society as a whole seems to legitimize and increase violence in the couple.

### **219. Death clustering in families in a longitudinal perspective (Antwerp, Belgium, 1846-1905)**

*Mattijs Vandezande, KU Leuven*

In the recent literature on young age mortality, quite some attention has been devoted to the spread of deaths between families. Most infant deaths seem to cluster in a rather limited number of families, an observation which has been named 'death clustering'. Studying infant mortality from a family perspective relocalizes the focus of explanations from individual characteristics to family traits. Family-level explanations might not only enhance our knowledge of causes of infant mortality, it will also improve our understanding of mortality differentials. This paper aims at studying death clustering over time. The data stems from a historical, 19th century population where mortality levels are still at a constant high, but the early stages of the fertility transition have already been set off. The changing population structure in terms of family sizes affects how mortality is spread between families. Infant mortality will be studied from both a familial perspective, and a hierarchical (multilevel) structure where infant death risks are dependent from one another. By using the perspective of death clustering, the focus is shifted towards the family, enhancing an in-depth look to the relationship of infant mortality and the fertility decline.

**219. Does exposure to influenza very early in life affect mortality risk during a subsequent outbreak? The 1890 and 1918 pandemics in Canada**

*Stacey Hallman, University Of Western Ontario; Alain Gagnon, Université de Montréal*

Using Canadian data, we explore how exposure to influenza very early in life during the pandemic of 1890 may have influenced mortality risk in the subsequent pandemic of 1918, twenty eight years later. As mortality in 1918 peaked at age 28 in Toronto and in other Canadian cities, we posit that infection with influenza in critical periods of development can result in physiological or immunological impairments that increase risk of death from influenza later in life. The peak at age 28 was most evident in large Canadian cities, while the pattern was still present in a less extreme form in rural areas. The 1918 influenza pandemic occurred during the health transition and, through enduring links to the 1890 pandemic, shows that experiences before the transition may have directly influenced the course of the most severe pandemic of this time period. This study provides new empirical insights connecting early physiological insults and immunological experiences to later life mortality.

**219. Migration and Urban Graveyards**

*Paul Puschmann, KU Leuven; Robyn Donrovich, KU Leuven; Graziela Dekeyser, KU Leuven - Centre for Sociological Research; Koen Matthijs, Katholieke Universiteit Leuven*

The aim of this paper is to study mortality differences between migrants and natives in the Western European port cities of Antwerp, Rotterdam and Stockholm (1850-1920). We will make use of life-course data from the Antwerp COR\* database, the Historical Sample of the Netherlands and the Stockholm Historical Database. For the description of differences in mortality between migrants and natives we will make use of Kaplan Meier curves. We will fit an event history model (Cox proportional hazard model) in which time to death functions as the dependent variable. Independent variables of interest are sex, country of origin, socio-economic status, marital status, literacy (as an indicator of education), urban-rural background, city quarter of residence and cohort.

**219. Public goods and health inequality: lessons from Paris, 1880-1914.**

*Lionel Keszenbaum, Institut National d'Études Démographiques (INED); Jean-Laurent Rosenthal, CalTech*

Around 1900, after centuries of disadvantage, urban life expectancy passed its rural counterparts. The process can be linked with two broad phenomena: rising incomes and improved sanitation. We focus on Paris during the key period of the health transition (1880-1914) and assemble a longitudinal data set on mortality, income, and connection to sewer for each of the city's 80 neighborhoods. We show that life expectancy in Paris was not very different from the rest of the country –around 50 years at age 5– but the difference between best and worst neighborhoods exceeded 10 years. These huge mortality differentials are strongly related to a variety of income indicators. Over time, mortality across neighborhoods first diverged and then converged. This pattern cannot be explained by variation in income or fixed neighborhood characteristics. It is due to the gradual diffusion of sewers that were adopted faster in rich neighborhoods than in poor ones.

**220. Family Planning Policy in China: Measurement and Impact on Fertility**

*Fei Wang, University of Southern California*

The extent to which China's family planning policy has driven its fertility transition over the past decades is debatable. The disagreement is partly sourced from the different ways of measuring the policy. This paper reviews the entire history of China's family planning policy and accordingly, proposes a new policy measure that integrates the policy variations more completely, heterogeneously, and exogenously than existing measures by using the cross-sectional data of the

China Health and Nutrition Survey. The new measure estimates the effect of policy on fertility and generates negative regression coefficients that well reproduce the history. As for the contribution of the policy to fertility transition, the measure explains a sizable level shift of fertility for major cohorts, but only accounts for a small portion of the fertility decline over generations. In addition, a more-educated woman, a woman residing in a better-developed coastal province, or a woman whose first child is a son tends to desire fewer children and thus, receives lighter pressure from the policy. Other than fertility, a woman would delay her marriage in response to the policy. Finally, the paper shows that using an incomplete or endogenous measure or a measure lacking heterogeneity could systematically change the results.

## **220. First Births in Europe: Socio-economic Differentials in the Effect of Economic and Institutional Contexts over the Life-course.**

*Karel Neels, Universiteit Antwerpen; Jonas Wood, University of Antwerp / CELLO; Zita Theunynck, University of Antwerp*

Postponement of parenthood contributed heavily to the emergence of subreplacement fertility in Europe in the 1980s and 1990s. Recuperation of fertility has gained importance in determining period fertility levels and is associated with policies that reduce the opportunity costs of fertility and support dual earners in combining work and family. We use data from the European Social Survey to assess the impact of economic and policy contexts on first birth hazards of men and women in 14 EU countries between 1970 and 2005. Using multilevel discrete-time hazard models, we focus on differential effects of these contextual factors by age, gender and socio-economic position. Results show that adverse economic conditions significantly reduce first birth hazards of both men and women below age 30, with effect being more pronounced among the higher educated. After age 30, family policies contribute to the recuperation of fertility but the effects vary by socio-economic groups.

## **220. The Effect of a Regional Tax and Family Benefit Reform on Fertility in the Norwegian Arctic**

*Taryn Ann Galloway, Research Department, Statistics Norway; Rannveig V Kaldager, Research Department, Statistics Norway*

This paper studies the effect on fertility of a series of three regional reforms, implemented 1988-1990, that changed the budget constraints of families in the northernmost parts of Norway compared to similar families in the rest of the country. The quasi-experimental nature of this policy change allows us to examine how exogenous variation in disposable income and the cost of childbearing affects fertility rates. In other words, we will compare the difference in fertility-related outcomes before and after the policy change (reform) in the affected regions with the same outcomes before and after 1989 for unaffected regions of the country. Individual-level multivariate analysis suggests that the reform did not have a causal effect on fertility.

## **220. The effects of financial incentives for newborns in Korea**

*Seemoon Choi, Harvard School of Public Health; Victoria Y Fan, Center for Global development; Hiroaki Muppy Matsuura, University Of Oxford*

Although Korea has successfully experienced a demographic transition, its super-low fertility (1.08 in 2005) has become its serious public issue. To encourage couples to have additional children, since 2003 district-level local governments have begun providing financial incentives (FIN) to the parents who have registered the birth of their child with their local government, with FIN generally higher for children of second or higher order births. The objective of this study is to assess the effects of these FIN programs on the household decision to have an additional child. We used four datasets: 1) data for FIN programs of local governments for the birth registration; 2) birth registry data over 1999-2009; 3) district-level resident registration statistics; and 4) Census

data for 2005. The method of this study is panel time-series analysis. Having any FIN increases the crude rate of 2nd-order births by 2.92% ( $p < 0.01$ ) and 3rd-order births by 8.45% ( $p < 0.01$ ). A FIN of one million Korean Won (US\$887) is significantly associated with a 3.0% ( $p < 0.01$ ) increase in crude rate of second or higher order births, and is also associated with 2.3% ( $p < 0.01$ ) increase in crude rate of third or higher order births. This study suggests that FIN programs for the birth registration was effective in encouraging parents who have a second or more child.

### **221. Caesarean section delivery in India: causes and concerns**

*Shewli Shabnam, Jawaharlal Nehru University*

The rising trend of caesarean section (CS) delivery throughout the world has become a serious public health issue. In India the rate of CS has increased from 3% to 10% between 1992-93 and 2005-06 (IIPS, 2007). The present study seeks to explore the level and trend of caesarean section delivery in India. It also attempts to identify the causes of alarming growth rate of CS in some parts of India. The analysis is based on third District Level Household and Facility Survey and three rounds of National Family Health Survey conducted in India. Logistic regression model is used to understand the net impact of various explanatory variables on woman's experience of CS. A number of doctors and patients from different public and private institutions were interviewed to identify the underlying causes of high growth rate of CS. Besides the profit maximization tendency of the private medical institutions, rise in institutional deliveries and patients' choice for CS, poor doctor-population ratio, 24 hours unavailability of obstetricians in the medical institutions, poor infrastructural support for normal delivery, constant threat of case suits and physical harassment against doctors are cited as some of the important causes of increase in caesarean section delivery.

### **221. Entre la exclusion sociale et la médicalisation : inégalités sociales et santé sexuelle et reproductive au centre du Mexique**

*Itzel A Sosa Sanchez, Université de Laval; Catherine Menkes Bancet, Centro Regional de Investigaciones Multidisciplinarias*

L'élargissement de la médicalisation dans certaines régions du monde, dont le Mexique ne signifie pas que les attentes et les besoins des femmes en matière de santé reproductive aient été garantis et comblés. Plusieurs ont documenté la perpétuation de pratiques médicales coercitives qui mènent à la violation des droits sexuels et reproductifs des femmes dans contextes institutionnels. Par ailleurs, il est possible d'observer le recours fréquent à des interventions médicales telles que la césarienne, l'utilisation indiscriminée de l'épisiotomie et des stérilisations féminines dans le système public de santé. Cette communication expose les résultats d'une recherche qualitative menée au centre du Mexique portant sur l'effet des inégalités sociales et de la médicalisation sur la santé sexuelle et reproductive des utilisatrices des services de santé publique. Nos résultats indiquent que les diverses inégalités sociales sont reproduites et légitimées dans le cadre des services de santé à travers les pratiques des professionnels de la santé et les interactions médecin-patientes dans les services de santé reproductive. Ceci a des répercussions non seulement sur la satisfaction des besoins des utilisatrices de ces services, mais sur leur santé et l'exercice et la reconnaissance de leurs droits reproductifs et humains fondamentaux.

### **221. Evolution de l'assistance à l'accouchement par un prestataire qualifié en Afrique: effet de composition ou de performance?**

*Maria Wendso Sidonie Gouem, INSD / Burkina Faso*

Partout où les mères sont très exposées à la mortalité maternelle, leurs enfants eux aussi sont en danger. Les infections, l'asphyxie et les lésions à la naissance, l'insuffisance pondérale, les complications de l'accouchement sont les causes principales de la mortalité des nouveau-nés. Les complications obstétricales sont aujourd'hui la cause majeure de décès des femmes en âge de

procréer dans les pays en développement et constituent l'un des problèmes sanitaires les plus urgents et difficiles à résoudre. Les objectifs du millénaire pour le développement perçoivent dans la réduction de la mortalité maternelle un impératif moral aussi bien qu'une priorité capitale de développement et, l'augmentation de la proportion d'accouchements assistés par du personnel de santé qualifié est un indicateur stratégique de l'objectif5. Cependant, l'Afrique Sub-Saharienne selon le rapport de suivi des OMD, court un grand risque de ne pas atteindre la réduction de 2/3 de la mortalité maternelle. Malgré les efforts consentis par les gouvernants et les multiples interpellations de la communauté internationale, des femmes en voulant donner une vie, perdent les siennes, d'où la question de l'assistance à l'accouchement par un personnel qualifié non encore universelle pour les pays d'Afrique subsaharienne justifie notre réflexion.

### **221. Rising overmedicalisation of births in India: a demand or supply phenomenon**

*Tiziana Leone, London School of Economics and Political Science (LSE)*

Rising overmedicalisation of childbearing in low income countries is seen as a worrying phenomenon as resources are scarce and could create a further risk for mother and child's health. Some Indian States have seen sky rocketing c-section rates reaching twice as high levels than the recommended WHO 15%. It is not clear whether this increase is determined by demand or supply. The aim of this study is to understand the interaction between health systems and individual socio-economic factors in determining the probability of a c-section after controlling for major demographic and biological risk factors. Using multilevel and spatial regression modelling this study analyses data from the 2007-08 Reproductive and Child Health Survey from six Indian states. Results show that after controlling for key risk factors, private institutions have a higher risk to perform c-sections. On the demand side higher education levels rather than wealth seems to increase the likelihood of a c-section. District level effects are significant in all the states demonstrating the need to control for health systems factors. This study confirms the need to invest in further research to understand whether the quest for increased institutional deliveries in a country with a high maternal mortality might not be compromised by a push for overmedicalisation.

### **222. Influences of Rural - Rural Migration and Socioeconomic Well Being on Infectious Disease Mortality in Nang Rong, Thailand**

*Yothin Sawangdee, Institute for Population and Social Research; Warangkana Polprasert, Sukhothaimathirat University, Thailand*

This study examines effect of rural-rural migration in the Northeastern Thailand where next to the Cambodia border which have a highly density of rural-rural migration. The purpose of move is seeking for land to grow cassava sugarcane corn etc. The research looks at effect of individual and household well being that affect probabilities to have infectious diseases such as malaria dengue fever diarrhea and HIV/AIDS. Data are from longitudinal survey of Nang Rong Project between 1984 and 2000. Number of sample is 28,298 individual, and 134 cases die because of infectious disease. Cause of death measured by verbal autopsy. Cox's proportional hazard models are employed. Results show that, controlling for origin communities development factors such as accessing to sub-district health center, number of health personal in the communities, those who used to have rural-rural migration more than two months are more likely to die because of infectious disease. Males are more likely to die more than females. The younger age people are more likely to get contact to infectious disease than the older ages. Those who are under low level of socioeconomic well being which are measured from household assets and number of cattle household have are more likely to die because of the disease.

## **222. Investigating the dynamics of migration and health in Australia: A Longitudinal study**

*Santosh Jatrana, Alfred Deakin Research Institute, Deakin University; Samba Siva Rao Pasupuleti, Alfred Deakin Research Institute*

Using multiple rounds of panel data from the Household Income and Labour Dynamics in Australia (HILDA) and random effect logistic regression techniques, this study determines the existence and temporal dynamics of the healthy immigrant effect. The key question is to identify whether differences in the various health outcomes (as measured by SF-36 with subscales mental health (MCS), general health (SRH), physical functioning (PCS); and psychological stress (K-10)) exist between the native –born (NB) and foreign-born (FB) and among the different migrant groups (e.g. English speaking countries, Asians and “other countries”) and if there is a difference, whether it remains over time adjusting for various covariates. These regression results showed that healthy immigrant effect varied according to the measure of health and immigrant group under consideration. For example, on one hand in terms of PH, people from Asia start being the healthiest but their health declines rapidly while people from ES speaking countries sustaining their health relatively longer period. However, psychological distress levels remain same for ES countries while they increase for FB Asians, as their duration of stay increases in Australia.

## **222. Migration and Child Health: Exploring Disparities in Child Nutrition and Immunization in Urban India**

*Kunal Keshri, G B Pant Social Science Institute, Allahabad University, Allahabad; Ranjan Kumar Prusty, International Institute for Population Sciences (IIPS)*

Migration and health share a complex relationship and interactions. The increasing urbanization and rural to urban migration provides a scope to analyze the health and nutrition status of migrants living in urban India. The present study tries to understand disparities in child immunization and nutritional status among children by migration status in urban India using the most recent available data of National Family Health Survey (2005-06). Descriptive statistics and binary logistic regression models were used to study the levels and factors associated with child nutrition and immunization by migration status. Results suggest that malnutrition and no immunization are very high among children of rural to urban migrants and full immunization is lower than urban non-migrants and urban-urban migrants. More than half of the children from of marginalised households suffer from the problem of undernutrition among rural-urban migrants. Multivariate results show economic status economic status, age of the mother, education, caste and media exposure are negatively associated with malnutrition and positively associated with immunization. Children from south, north-east and east have lesser chance of being malnourished than north region of India.

## **222. Population Migration and Health Stratification in Urban China**

*Jianlin Niu, Chinese Academy of Social Sciences; Yaqiang Qi, Renmin University of China*

This study examines the health stratification in urban China in light of the rapid population migration under current institutional arrangement. We use data from a nationally representative sample to compare the health disparities between migrants and urban natives in terms of health status, health need and accessible resources. A series of health measures, including both subjective reports and objective biometrics of different dimensions, are used in our health comparison to give a comprehensive picture of the health disparities among the urban residents. Migrants at different socioeconomic ladders, from rural and urban areas, are compared with urban natives of comparable socioeconomic statuses to decompose the health impacts from institutional and socioeconomic factors. The empirical finding from this study is expected to shed light on the pattern of health disparities in urban China and the related determinants from institutional and socioeconomic aspects.

### **223. Statistical distance: A promising measure of physiological dysregulation in biodemographic studies**

*Alan A Cohen, Université de Sherbrooke; Emmanuel Milot, Université de Sherbrooke; Vincent Morissette-Thomas, Université de Sherbrooke*

Many biodemographic studies incorporate biomarkers of physiological dysregulation and/or allostatic load. However, it is not clear how well these measures represent a global process of dysregulation, nor whether the various biomarkers incorporated into summary measures have been appropriately weighted or considered. Here we introduce a measure based on statistical distance – how common or rare a combination of variables is, according to its multivariate distribution – as an alternative approach to measuring physiological dysregulation. The measure is based on the principle that the more “strange” an individual’s biomarker profile is relative to a baseline population (used to define the distribution, ideally composed of young, healthy individuals), the more dysregulation is occurring. We use three examples to show strengths and limitations of the method. The biomarkers included must be chosen carefully (based on statistical or biological criteria) and the interpretation should be made in light of the variables included. Suites of appropriately chosen variables can help illuminate underlying physiology as well as serve as useful proxies for both mortality risk and biological age. Individual trajectories of statistical distance and in multivariate space are extensions that may help in understanding mortality and disease risk.

### **223. Interactions between ADRB2 Gene and the Social/ behavioral Factors May Affect Health at Advanced Ages**

*Yi Zeng, Duke University And Peking University; Qiushi Feng, National University of Singapore; Huashuai Chen, Duke University; Ke Shen, Fudan University, Shanghai; Jianxin Li, Peking University; Fengyu Zhang, National Institute of Mental Health; Huiqing Cao, Peking University; Qihua Tan, University of Southern Denmark; Simon Gregory, Duke University; Ze Yang, National Institute of Geriatrics, Beijing Hospital, Ministry of Health of China; Jun Gu, Peking University; Wei Tao, Peking University; Xiaoli Tian, Peking University; Elizabeth Hauser, Duke University*

Analysis of genotype/phenotype data from 877 individuals aged 90+ found that adjusted for various potentially confounding factors, carrying ADRB2-2718 or ADRB2-2719 minor alleles significantly reduced risk of negative emotion. Interactions between carrying ADRB2-2718 or ADRB2-2719 minor allele and negative emotion significantly reduced cognitive function. Interactions between carrying ADRB2-2718 minor allele and regular exercise significantly increased cognitive function; interactions between carrying ADRB2-2718 or ADRB2-2719 minor allele and regular exercise significantly increased likelihood of self-reporting good health; interactions between carrying ADRB2-2719 minor allele and social-leisure activities significantly increased likelihood of self-reporting good health. Positive effects of regular exercise and social-leisure activities on cognition and self-reported health, and adverse effect of negative emotion on cognition were much stronger among carriers of ADRB2 alleles, compared to non-carriers. This implies that health promotion programs considering individuals’ genetic profiles (with appropriate protection of privacy/confidentiality) would yield increased benefits and reduced costs to the programs and their participants.

### **223. Resource allocation as a driver of senescence: Life history tradeoffs produce age patterns of mortality**

*Raziel J Davison, Max Planck Institute for Demographic Research (MPIDR); Carol Boggs, Stanford University; Annette Baudisch, Max Planck Institute for Demographic Research*

We present a theoretical model of behavior and nutrient allocation for organisms with discrete juvenile (larval) and adult stages, each with distinct diets, nutritional needs and foraging strategies. We predict optimal schedules of foraging and reproduction across a limited lifespan and examine the consequences for nutrient dynamics, paying particular attention to conditions under which it is

optimal to tolerate starvation or to conserve resources and how these decisions affect mortality across the life cycle. We derive these optimal behavioral schedules assuming two alternative scenarios of environmental conditions, in which we do or do not impose deterioration in survival with age (senescence). We find that even in the absence of imposed senescence, terminal investment near the end of reproductive lifespans reduced survival probabilities of older individuals. We predicted earlier terminal investment and earlier senescence when reproductive overheads are low and when the survival costs of carbon depletion are small. Our findings suggest that resource allocation decisions alone are sufficient to produce signals of senescence and other age-patterns of mortality in animals optimizing decision schedules across their reproductive life cycles. We conclude that behavioral patterns of individuals can be strong drivers of observed d

### **223. Geriatric trauma shapes mortality in a tephritid fly**

*James Carey, University of California; James Vaupel, Max Planck Institute; Pablo Liedo, El Colegio de la Frontera Sur, Tapachula, Mexico; Hans Mueller, University of California, Davis; Jane-Ling Wang, University of California, Davis; Yu-Ru Su, University of California, Davis*

One of the most important questions in research on the biodemography of human aging involves the extent to which early life conditions affect frailty and mortality at advanced ages. We addressed this question experimentally by manipulating dietary conditions of Mexican fruit fly cohorts at younger and older ages. The study yielded five main results: (1) frailty at transfer age (55 days) was far greater in flies maintained on lower quality diet (sugar) at early ages than those maintained on full diets for both sexes; (2) using mortality as a proxy, within-treatment frailty was far greater in males than in females at all advanced ages; (3) remaining life expectancy at advanced ages depended on both past and current dietary conditions for both sexes. Thus the mortality was not memoryless as has been reported in several other studies;. (4) after the initial 1- to 3-day mortality spike due to transfer stress, age-specific mortality for many treatments differed in scale but not in pattern—several were largely age-independent; (5) egg production in older females was drastically affected by past and current conditions. Implications for understanding the effects of early life experience on old age frailty and mortality in human populations will be discussed.

### **224. Benefits of international migrations for socio-ecological resilience of rural households in the home country**

*Fabrice F.D. Demoulin, University of Namur; Raul Vanegas, Université de Namur; Sabine JF Henry, University of Namur*

The objective of this paper is to analyse the effects of migration on the factors of ecological resilience at the household level in two Ecuadorian provinces with a focus on three communities. The attributes of resilience that are treated here are: the diversity of interrelations (with redundancy of supply chains.), the tight feedbacks loops which control ecosystem services, the modularity seen as the ability to maintain its vital activities with local resources in case of systemic shock and the connectivity as the ability to trade at larger scales to cope with local systemic shocks. We assume that the whole interactions between socio-ecological systems and the rural households are modified by the departure of at least one of its member to abroad: decrease of the workforce, remittances, transfers of knowledges. The sources of data used are the census of INEC (2011), a qualitative survey (2010) and a quantitative survey (2011). Statistical tests are realized at the household level. We observe strong links between migration and left-behinds' lifestyle. These links appear in favour of a clear differentiation of left-behinds in terms on the ecological resilience: more diversity of sources of consumption, more connectivity but also a loss of modularity and therefore less resilience to shocks at the global scale.

## **224. Modeling the Linkages between Climate Change, Food Security, and Population**

*Scott Moreland, Futures Group; Ellen Smith, Futures Group*

Developing countries face ever increasing challenges in the area of food security. Among these challenges climate change is arguably one of the most serious and wide-spread threats, since it affects all regions of the world, albeit not equally. There is growing evidence that climate change is decreasing the productivity of many crops around the world, thus increasing the risk of food shortages in developing countries where agricultural systems are low-tech and malnutrition is common. While population growth is often mentioned as a contributing factor to food changing the rate of population growth is rarely seen as a climate change adaptation policy alternative. We developed a computer simulation model to help clarify the dynamic relationships between climate change, food security and population growth. The model links a population projection, a computable general equilibrium economic model that takes account of the effects of climate change on agriculture, and a food requirements model of the population that uses FAO formulas. We piloted the model in Ethiopia. The model shows that, as expected, climate change will exacerbate the food security gap in Ethiopia but that lowering population growth will reduce the gap to a level that is close to that without climate change.

## **224. Out-migration and the transition from farming to non-farming in Chitwan, Nepal**

*Seung Yong Han, Arizona State University*

The purpose of this study is to understand how out-migration at the household level affects the decision to transition from farming to non-farming in the context of Chitwan, Nepal, between 1996 and 2006. Education, land size, environmental threat, and perceptions on environment are considered as moderating factors. Out-migration is expected to increase the likelihood of the transition in that financial and social remittances brought by migration would make a household to invest more in non-farming under certain conditions. Out-migration is measured at each month since February, 1996 until 2006. Two main measurements of migration at household level are tested: total duration and number of migrants. Preliminary multilevel analysis results indicate that migration has positive effect on the transition out of farming. The perception on water quality and the distance to the off-farm opportunities have significant effects on the transition as well.

## **224. Household Energy Use and CO<sub>2</sub>Emission: Differentials and Determinants in India**

*Kaveri Madhukar Patil, International Institute for Population Sciences (IIPS); Aparajita Chattopadhyay, International Institute for Population Sciences*

Improving access to affordable clean energy is critical for enhancing the quality of life. Rural households in India are almost entirely reliant on traditional biomass for cooking. This has adverse effect on health and productivity along with environmental degradation. The paper deals with three important issues, using National Sample Survey 66th round data (2009-10); Firstly, it shows the household energy use pattern in rural and urban India by economic class; Secondly, it analyzes the determinants of such use and thirdly it assess the amount of CO<sub>2</sub> emission by Indian household using emission coefficient by fuel type. Household size, level of urbanization, literacy and age distribution of household have significant influence on type of fuel use. Monthly per capita expenditure shows a significant impact on the choice of cooking fuel. It calls for immediate interventions to protect the rural and poor households from their daily exposure of such risk factors.

## **225. Birth month is predictive of early life outcomes in sub-Saharan Africa**

*Audrey M Dorelien, University of Michigan*

Under-five mortality rates (U5MR) have been declining slowly in Sub-Saharan Africa: between 1990 and 2008 the U5MR declined by only 22%. If there is a strong relationship between birth month and U5MR, then policies that help women conceive during optimal periods or that improve

the health of pregnant women may help reduce U5MR. But the effectiveness of such policies will depend on whether the birth month effects are the result of structural differences in fertility patterns, or due to differences in pre and post-natal environments. We use piecewise exponential hazard models to analyze the relationship between birth month and U5MR, in 30 SSA countries using data from the Demographic and Health Surveys. We also use logistic regression models to analyze the relationship between birth month and stunting. The birth month effects on child mortality and stunting are large and statistically significant. On average, the U5MR associated with the birth month with the highest cumulative hazard is 39% higher than the U5MR for the birth month with lowest cumulative hazard. The maximum difference in predicted probabilities of being stunted between two birth months is on average nine percentage points. The birth month effects are not due to social-demographic differences in fertility patterns.

### **225. Cause-specific Neonatal Deaths: Levels, Trend and Determinants in Rural Bangladesh, 1987-2005**

*Unnati Rani Saha, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B); Arthur van Soest, Tilburg University; Govert E Bijwaard, Netherlands Interdisciplinary Demographic Institute (NIDI)*

Reducing neonatal mortality is a particularly important issue in Bangladesh. We employ a competing risks model incorporating both observed and unobserved heterogeneity and allowing the heterogeneity terms for various causes to be correlated. Data come from the Health and Demographic Surveillance System (HDSS), Matlab. Results confirm the general conclusion on levels, trends and patterns of causes of neonatal deaths in the existing literature, but also reveal some remarkable socioeconomic differences in the risks of cause-specific deaths. A remarkable finding is gender inequality in deaths particularly due to CDs in the icddr,b area which is about 70% higher for a boy than for a girl and this difference is about 11 deaths per 1,000 live births over the neonatal period. Deaths due to low birth weight and other causes (sudden infant death, unspecified or specified) are better explained from the socio-economic covariates than deaths due to neonatal infections or obstetric complications. The analysis highlights the role of maternal and child health interventions (particularly tetanus toxoid immunization for pregnant women, nutrition programs, and high coverage health services: distance to nearest health centre). Policies that increase quality and equity in child births may help to further reduce neonatal mortality.

### **225. First-day Neonatal Mortality in the Developing world: A Neglected Crisis?**

*Sabu Padmadas, University of Southampton; Fifi Amoako Johnson, University of Southampton; Nyovani Madise, University of Southampton; Jane Cecelia Falkingham, University of Southampton*

We examined the Demographic and Health Surveys (DHS) data from 31 countries over the last 20 years to estimate the levels and trends of first-day mortality rates considering potential differences in socioeconomic and healthcare factors. The trends in first-day mortality rates and 95% confidence intervals were estimated adjusting for potential clustering effects, comparing three successive DHS held across countries covering sub-Saharan Africa, South and Southeast Asia and Latin America. The findings show that first-day mortality rates varied widely from 21 deaths per 1000 live births [95%CI: 19, 23] in Mali to about 17 per 1000 in Kenya and Tanzania to less than 10 per 1000 in Peru, Egypt and Philippines. The absolute change in the rates between DHS2 and DHS3 were not significant in about 24 countries and the levels were stagnantly high or increased in about 8 countries. There is also evidence of considerable variation in the share of first-day deaths over early neonatal mortality. Wealth differentials in first-day mortality rates were pronounced in a few countries. A negative linear relationship was found between first-day mortality rates and skilled attendance at birth. In countries where there is high medical intervention in births had relatively low rates of first-day mortality.

## **225. High Under-Five Mortality among Twins in Sub-Saharan Africa: Patterns and Explanations**

*Christiaan Willem Simon Monden, University Of Oxford*

Sub-Saharan Africa has the highest levels of both twinning and under-five mortality in the world. It also had high excess mortality among twins. Surprisingly little is known about the infant and child mortality pattern among African twins. We examine which factors are associated with excess twin mortality and to what extent these factors are ‘universal’ or vary in weight by regions in Sub-Saharan Africa. We pool over 60 Demographic and Health Surveys from 32 Sub-Saharan African countries to obtain data on more than 45,000 twins. We include factors associated with under-five mortality on the child, mother and household level (e.g. maternal age & education, birth-interval) and the regional and national level (e.g. health-care facilities and development). We examine differences in these factors between twins and singletons and test interaction-effects between each determinant of mortality and twin singleton status. Finally, we examine variations in the determinants across regions of Sub-Saharan Africa.

## **226. Concurrent sexual partnerships among young adults in Cape Town, South Africa: How is concurrency changing?**

*Brendan Maughan-Brown, University of Cape Town*

The debate about the role of concurrent sexual partnerships in the spread of HIV is influenced by weak/limited empirical data on concurrency.

Longitudinal data ( $n = 2958$ ) were employed to examine the prevalence of individual concurrency (someone who has additional partners) and perceived partner concurrency (partner perceived to have additional partners) by population group and gender in 2005 and 2009. Fixed effects logit regression models were created to examine factors associated with changes in individual concurrency.

The prevalence of individual concurrency increased among black men (from 33% in 2005 to 39% in 2009), remained constant among black women (14%), decreased among coloured men (from 16% to 8%) and remained low among coloured women (2% in 2005 and 1% in 2009). Overall, a small decrease in perceived partner concurrency was observed. Changes in individual concurrency were positively associated with changes in perceived partner concurrency and finding employment; and negatively associated with household income.

Race and gender differences in concurrency should be taken into account in future research and HIV-prevention initiatives. High and increasing levels of concurrency within most recent partnerships among black men highlight this group as a potential focus for such efforts.

## **226. Sexual network structure, partnership mixing patterns and HIV epidemic outcomes**

*Georges Reniers, London School of Hygiene and Tropical Medicine (LSHTM); Benjamin Armbruster, Northwestern University; Aaron Lucas, Northwestern University*

By means of a simulated epidemic in a population that resembles a southeastern African country, we demonstrate the effects of sexual network structure and mixing patterns on epidemic outcomes in terms of HIV prevalence, the fraction of incidence that is due to primary infection and the sex ratio of infections. The sexual mixing patterns and sexual network attributes that we explore are loosely based on empirical patterns and relate to partnership concurrency, partnership turnover rates, coital dilution, serosorting, elevated dissolution rates in HIV discordant couples, and the disproportionate recruitment of HIV positive women into polygynous unions. We find that high partnership turnover rates and partnership concurrency advance the spread of HIV, but these effects are mitigated (or reversed) by coital dilution, serosorting, and elevated dissolution rates in HIV discordant couples. Partnership concurrency also increases the fraction of incident cases that are due to primary infection as well as the gender imbalance in new infections.

**226. Testing the Concurrency Hypothesis: HIV incidence among married couples in two population-based cohort studies in rural Uganda**

*Elizabeth A. Sully, Princeton University; Fred Nalugoda, Rakai Health Sciences Program ; Kenneth Ekoru, Medical Research Council / Uganda Virus Research Institute; Tom Lutalo, Rakai Health Sciences Program; Georges Reniers, London School of Hygiene and Tropical Medicine (LSHTM); Janet A Seeley, University of East Anglia*

Concurrent partnerships are often considered a primary driver of the HIV epidemic in Sub-Saharan Africa. Due to data constraints, however, few studies have been able to demonstrate its effect using empirical data. In this paper, we test whether HIV transmission rates are higher for individuals with concurrent partners - an effect that is ascribed to the higher viral load shortly after seroconversion. Data spanning a 14-year time period are pooled from two rural community sero-surveillance sites in south-Western Uganda. Sero-concordant negative married couples are followed over time, examining the risk of seroconversion for couples exposed to concurrency. A discrete-time hazard model is used to determine the risk of seroconversion among women whose husbands reported a concurrent partnership. We are unable to detect an effect of the husband's concurrency on the HIV incidence of their wives. Our preliminary findings are in support of a growing body of literature that casts doubt on the role of concurrency for the spread of HIV.

**227. Bequests Motives and Private Transfers in India**

*Thangamuthu Lakshmanasamy, University of Madras*

Households transfer substantial wealth between generations under various motives. Apart from life cycle consumption smoothing and old age security purposes, parents transfer wealth to children with motivations of altruism, exchange, strategic or risk sharing. Theoretically, altruism predicts a one to one correspondence between parental income and child income. Under exchange, transfer is positively related to the services provided by the child. When strategic motive is operative, the ex ante transfer is motivated by the services provided by each child. This paper empirically examines the transfer motives in India using a 2006-07 primary data from 315 urban households. The decision on transfer is estimated by Probit equation and the size of transfer is estimated by Tobit equation with parental and child characteristics. The estimated results show that the basic motivation for transfer is one of exchange. Indian households exchange wealth largely for the support and services provided by the children.

**227. Do adoptive parents differ? A study of dissolution risk among biological and adoptive parents in Sweden**

*Ida Viklund, Stockholm University; Ann-Zofie Duvander, Stockholm University*

This study investigates whether the different circumstances of parenthood that adoptive parents and biological parents encounter lead to different divorce risks. An adoption involves a large emotional and economic investment, and the potential parents undergo an arduous investigation for approval to adopt by the social authorities. Other stressful factors might be the child's attachment to the new parents, and the child's development in school, which has been shown to lag behind other children of the same age. Such tensions could increase the divorce risk. However, a gender equal parenthood with involvement from both parents has the potential to decrease this risk. We will study this question in Sweden, a country with a relatively high rate of divorce, strong gender equality norms, as well as a high proportion of internationally adopted children. The study makes use of administrative register data that covers the entire Swedish population over the period 1993-2007. The divorce risk will be investigated with event history analysis. By adjusting for factors shown to correlate with divorce risks we will be able to draw conclusions about the interrelationship between the different circumstances of parenthood for these two groups of parents, gender equal parenthood, and divorce risk.

## **227. Family diversity and inequality: the Canadian case**

*Roderic P. Beaujot, University Of Western Ontario; Zenaida Ravanera, University Of Western Ontario; Jianye Liu, Lakehead University, Ontario Canada.*

Family diversity and inequality: The Canadian case

The Second Demographic Transition, including flexibility in types of unions and in entry and exit from unions, has increased the diversity across families. There has been a significant cultural and political dynamic to celebrate this diversity as an increase in individual options, beyond the heterosexual couples with children in a traditional division of labour.

Diversity can be expressed in various ways: economic families or unattached individuals, married or common law, two parents or lone parent, opposite sex or same sex, breadwinner or two earners, traditional division of work and care or collaborative model, couples with and without children, intact or step-families (simple or complex).

On the basis of Canadian data from 1981 to 2011, this paper investigates the extent to which the greater diversity can be seen as representing risks and inequality across families and individuals. There has also been an increased difficulty for policy to support individuals and families that are so diverse in their family life course and in their needs.

## **227. Socioeconomic resources and division of breadwinning responsibilities in the early stages of childrearing**

*Kari Skrede, Statistics Norway; Kenneth Aarskaug Wiik, Statistics Norway*

The analysis is based on register data comprising all Norwegian married and cohabiting couples whose first common child was born in the period 1987 – 2001. We analyze the sharing of breadwinning responsibilities within the couple at three stages of the family cycle: the year the first common child was born, two years after and six years after. We define the following four groups of breadwinning models: I Traditional (mother's income amounts to 35 percent or less of father's income), II "Equality light" (mother's income amounts to between 35 and 80 percent of father's income), III Equal (mother's income amounts to between 80 and 120 percent of father's income) and IV Untraditional (mother's income amounts to more than 120 percent of father's income, including couples where father's income = 0). We investigate to what extent the couples' distribution on breadwinning models are influenced by socioeconomic resources, defined as couple's education (combined classification) and father's income, marital status (married or cohabiting), as well as family changes after the initial year – like additional children born and transition to marriage for cohabitants. We also include several demographic variables as control variables.

## **228. Emigration camerounaise. Capital socioéconomique et trajectoire**

*Lekeumo Simplicite kitleur, Roll Back Malaria Program*

Depuis près d'une décennie, la littérature sur la migration internationale met en exergue les processus de complexification des systèmes migratoires comme l'une des tendances fortes des dynamiques migratoires contemporaines et s'attelle à éclairer les mécanismes qui la sous-tendent en s'attachant aux logiques et systèmes d'acteurs (BABY-COLLIN et al, 2009). La présente communication pour sa part voudrait comprendre dans quelle mesure les trajectoires migratoires suivies par les migrants et migrantes dépendent-elles des conditions socioéconomiques et démographiques des camerounais ? Partant de la troisième Enquête Camerounaise Auprès des Ménages réalisée en 2007 et qui est la première enquête camerounaise d'envergure nationale à saisir l'information relative à la migration, nous montrons que les femmes migrent globalement comme les hommes avec des légères différences ; la destination Europe/Amérique/Asie est associée aux migrants exprimant un besoin de formation et d'étude, de niveau instruction supérieur, dont le chef de ménage d'origine exerce dans les secteurs public et privé formel ; à

l'inverse, les migrants à destination d'un pays de la CEMAC ou d'un autre pays africain sont en général à la recherche d'un emploi, sont de niveau d'instruction au plus égal au niveau primaire, sont plus jeunes.

### **228. Integration and Welcome-ability Indexes: Measures of Community Capacity to Integrate Immigrants**

*Zenaida Ravanera, University Of Western Ontario; Victoria Esses, University Of Western Ontario; Fernando Rajulton, University Of Western Ontario*

We develop two indexes to measure the capacities of communities to welcome and integrate newcomers: (1) a welcome-ability index – an indicator of integration capacity and opportunities in communities, and (2) an integration index – a measure of economic, social, and political integration of individuals. The latter is an outcome of the processes measured by the former. The first, a community-level measure, takes into account opportunities and facilities, including employment and educational opportunities, facilities for health care, positive attitudes towards immigrants, and opportunities for political participation. The second, an individual-level measure, takes into account the multi-dimensionality of societal integration, specifically, economic inclusion and parity, social recognition and belonging, political involvement that insures the legitimacy of institutions, and civic participation. The welcome-ability index is illustrated with data gathered for a project that collated baseline information on Ontario communities served by local partnerships specifically tasked with enhancing the capacities of communities to welcome newcomers. The integration index is developed with data from the 2008 Canadian General Social Survey on Social Networks.

### **228. Metropolitan Characteristics and Immigrant Entrepreneurship**

*Eric Fong, University of Toronto; Junmin Jeong, University of Toronto; Julie Eun Jung Jo, University of Toronto*

It has become more common to find immigrant entrepreneurs not only in immigrant gateway metropolitan areas with large populations, but also in smaller and medium-sized metropolitan areas. As these locational patterns of immigrant businesses emerge, it is more pressing to understand how immigrant entrepreneurship is related to metropolitan characteristics. It is an important issue, as Schumpeter identified long ago that entrepreneurship is deeply embedded in social and economic contexts. In this paper, we extend the study of immigrant entrepreneurship by examining its relationship to individual and city characteristics simultaneously. We focus on city characteristics in order to explain variations among metropolitan areas. Our study is based on 2006 Canadian Public Use Microdata File. We employ a mixed model, as individuals in our sample are nested in various cities. The results clearly demonstrate the importance of including metropolitan characteristics in understanding immigrant entrepreneurship. Implications of findings will be discussed.

### **228. Pioneer Settlement Patterns of 13 U.S. Immigrant Groups: Factors Associated with Migration to Areas Where No Group Members Lived in 1990**

*Douglas T. Gurak, Cornell University; Mary M Krutz, Cornell University*

For thirteen Hispanic, Asian, and Caribbean immigrant groups, this paper examines the process of immigrant dispersion during the 1990s, focusing on place factors associated with settlement in areas where no group members lived in 1990. The objective is to evaluate the relative importance of economic, demographic, social and co-ethnic correlates of pioneer settlement in new destinations and the extent to which these processes vary across immigrant groups. Using confidential decennial Census data, each of 741 labor markets are classified as unsettled or "empty" for each immigrant group if it had no members there in 1990. For each of the 13 groups, Zero-inflated Poisson (ZIP) regressions are estimated to specify the characteristics of labor

markets that received higher counts of pioneer settlers. The major determinants include distance from a group's closest top-5 gateway, size of population in 1990, economic characteristics, native-born population growth, and the settlement history of other ethnic populations.

**229. After the flood: the advantages of demographic change - Fewer, older, smarter, and healthier?**

*Fanny Kluge, Max Planck Institute for Demographic Research; Emilio Zagheni, Queens College, City University of New York (CUNY); Elke Loichinger, Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/OeAW, WU), Vienna University of Economics and Business; Tobias C Vogt, Max Planck Institute for Demographic Research (MPIDR)*

Population aging is an inevitable global demographic process. Most of the literature on the consequences of demographic change focuses on the challenges that economies and societies will face as people live longer and have fewer children. In this paper, we (a) describe key trends and projections of the magnitude and speed of population aging, (b) review the literature on the economic, social and environmental consequences of population aging, and (c) investigate the opportunities that aging societies create. We argue that there are relevant positive unintended consequences of population aging that can be leveraged to address pressing environmental problems, and issues of gender inequality and intergenerational ties.

Will population decline and aging lead to less pollution, and environmental damage? Will expenditures for the young and old balance if huge private downward transfers (bequests) are taken into account? Will the younger generations increase the time spent caring for the elderly and receive higher transfers from the older generations? Will the increasing share of individuals proceeding to tertiary education boost economic growth? We address these questions using a wide range of data including National Transfer Accounts, projections of CO2 emissions, labor force by educational attainment, and time transfers.

**229. Aged and Not Developed; Population Policies in Uruguay, a Middle-Income Country**

*Juan José Calvo, Universidad de la Republica*

This paper presents an analysis of a recent elaboration process of population policies and development conducted in Uruguay, a demographically small middle-income country that has aged early, with a very advanced demographic transition and fertility rates below replacement levels since 2004. Towards 1930 Uruguay had already culminated its demographic transition, with comparatively low gross birth and mortality rates as compared with the rest of Latin America and the Caribbean. As a result, the population's age structure already showed important signs of aging by 1950, and this continued deepening further to date. The economic restrictions faced by the political responses are greater than those of industrialized countries which have experienced similar demographic processes. The strong financial pressures on the retirement and health systems, and in more general terms the concern of the political elites' regarding the country's demographic sustainability determined the generation of a new institutional environment related with the design of population policies. This paper resorts to a collection of laws, programs and actions, together with the rationales detailed in the corresponding accompanying statements of intent, in order to analyze these innovations with the contexts and reasons that contributed to foster them.

**229. Economic Growth, Demographic Change and Housing Transformation in Korea**

*Hyunjeong LEE, Kyung Hee University*

South Korea, one of Asia's most successful developmentalist state, has marked rapid economic growth and shown fast recovery from economic crises. The state at an early stage of economic development necessarily implemented industrialization and urbanization, and at a later stage experienced democratization and globalization. A series of the process has been inevitably

accompanied with demographic change that was particularly striking after the emergence of global capitalism. The most notable features of the changing demography include ageing population, declining birth rate, a wide arrange of new household types, and reduction in household size. The demographic transitions have been so obvious to transform housing system. This study is to look into the relationship between economic growth and demographic change, and to examine how these affect and are affected by housing transformation. In doing so, wide arrays of national data are used, and it's obvious that housing norms (e.g., structure type, tenure, size and expenditure) are changed to react to the needs of major actors changing the state's demography – the elderly, single persons and baby boomers. Therefore, the conventional path for traditional families toward homeownership is no longer ensured, and the recent economic downturn concerns housing affordability.

### **229. Socio-demographic indicators of elderly economic well-being in Nigeria**

*Elias olukorede Wahab, Lagos State University, Ojo Nigeria; Oluwasegun Anigboro, Lagos State University*

This study investigates how socio-demographic indicators impact on well-being at old age in Nigeria. This is essential in order to improve the preparation for old age. Reliable information is also required to formulate comprehensive social security system for the elderly. Quantitative data were collected through individual-based questionnaire. Multi-stage sampling procedure was employed to select local government areas, enumeration areas and individuals for the study. In all, 200 respondents were interviewed. The study found that in terms of education, more than a quarter of the respondents with high education have better economic wellbeing. Level of education is statistically related to level of satisfaction with old age wellbeing. Among the females, less than one-fifth of the respondents reported satisfaction with old age economic wellbeing. Type of family is somewhat statistically related to elderly persons' economic wellbeing. This underscores the inadequacy of their income from pension. In conclusion, the idea that old-age security and well being in Nigeria should remain the primary responsibility of the family is untenable. Government must assume the primary responsibility in a partnership in which the family also continues to play a significant role.

### **230. Fertility scenarios for high fertility countries in the IIASA/Oxford education projections**

*Regina Fuchs, International Institute for Applied Systems Analysis (IIASA); Anne Valia Goujon, Vienna Institute of demography; Wolfgang Lutz, International Institute for Applied Systems Analysis (IIASA)*

For the new round of IIASA/Oxford education projections, we present a new fertility scenario making process that attempts to overcome limitations of regular assumption making. Firstly, we include a large number of international experts to feed into the scenario making process by answering a questionnaire to identify main drivers of fertility, and secondly, a group of meta-expert evaluates results from the questionnaire. The construction of the scenarios consists of a three staged modeling approach. First, we estimate a model, using a country's level and decrease of fertility during the past five-year period and compare it to countries with similar characteristics since 1970. Second, we estimate expected decrease of fertility by employing information, gathered from the fertility questionnaire. And third, numerical point estimates, supplied by the meta-experts, are utilized to estimate future fertility decline. Combining the information from three qualitatively very different sources, we are able to provide a new set of fertility assumptions to feed into the IIASA/Oxford education projections. This paper discusses a new assumption making approach for countries in today's high fertility world and compares the differences in methods and results to the Bayesian projection methodology introduced by the United Nations.

### **230. Low Fertility in China: How Credible are Recent Census Data?**

*Fan Yang, Renmin University of China*

According to census data, the TFR in China was 1.18 in 2010, which activated the discussion of census data quality and the real fertility level in China. It is necessary to figure out how credible are recent census data, especially the fertility data, which are the fundamental index of population and important factor closely related to the public policies. This paper focuses on assessing the fertility data quality in China's recent censuses and methods of improving it. The household registration data and educational statistics, which are independent of census system, were used to research whether there was underreporting in census data and improve the quality of it. The results suggested there was underreporting in census data, especially in the low-age groups. The data quality of educational statistics is the best because the number of children in the educational statistics has no close relationship with the interest of local governments and reporters, which is quite different from census data. So we combined the tendency of census data and the fertility level of education statistical data to correct the missing reports in the census data both in direct and indirect method to make improvements for the quality of census data, especially the low-age group data. Finally, the estimated TFR after emendation is listed at the end of this paper.

### **230. Reconstructing long term fertility trends with pooled birth histories**

*Bruno Schoumaker, Université Catholique de Louvain*

In this paper, we present a method for reconstructing and smoothing fertility trends by combining birth histories from multiple surveys. Data used in the paper come from World fertility surveys and Demographic and Health surveys. This method uses Poisson regression and restricted cubic splines to produce detailed long term fertility trends. In the first part, we present the method and illustrate its application by combining several fertility surveys in Colombia. Next, simulated birth histories are used to validate the method in a variety of situations. Finally, the method is applied to several countries, from various parts of the world, with varying numbers of surveys and with different data quality problems. Finally, these trends are compared with published fertility trends.

### **230. The sensitivity of measures of unintended pregnancy to question timing: Evidence from Malawi**

*Sara Yeatman, University of Colorado at Denver; Christie Sennott, University of Colorado and Hewlett/IIIE*

Unintended pregnancy is an important demographic measure used to justify and assess the success of family planning programs. There are three commonly used techniques to measure unwanted and mistimed pregnancies, all of which rely on the simplifying assumption that fertility preferences are relatively stable. Accumulated research from a variety of contexts, however, indicates that key measures of fertility preference, including ideal family size, the desire for another child, and the desired timing of next pregnancy, change frequently over time, particularly as women's life circumstances evolve. This paper uses seven waves of panel data, each spaced four months apart, from young women in southern Malawi to examine the prevalence of change in fertility preferences and the implications for measures of unwanted and mistimed pregnancy. Specifically, we estimate the prevalence of unwanted and unintended pregnancy using seven different measures, three of which allow for preferences to change over time. The paper concludes with a discussion of the differences in estimates and the possible implications for measures of unintendedness in other contexts.

### **231. Factors associated with adolescent pregnancy and fertility in Uganda: Analysis of the 2011 Demographic and Health Survey data**

*Gideon Rutaremwa, Makerere University*

Adolescent pregnancy and fertility are often discussed in literature as causes of health concern and as a social problem. Taking these accounts as a starting point, this paper uses the 2011 Uganda Demographic and Health Survey Data to explore the factors related to adolescent fertility and pregnancy in Uganda. A total of 2,026 female adolescents are selected for this study. Logistic regression analyses adjusted for socioeconomic and demographic characteristics are estimated to predict the odds of an adolescent having borne a child in the 5 years preceding the survey, being currently pregnant and both having had a child in the 5 years preceding the survey or being currently pregnant at the time of the survey. Marital status is a strong predictor of the likelihood of both having a child in the 5 years preceding the survey and being currently pregnant at the time of the survey. Age equally appears to be an important predictor of the two outcomes, such that an increase in age was associated with increase in the odds of being pregnant and of having born a child. The discourse in this paper shows that adolescent pregnancy and motherhood is a serious policy intervention area that requires redress.

### **231. Regional evidence about consequences of teen childbearing in Colombia 2010**

*Lizethe Alejandra Amézquita, Universidad Nacional de Colombia; Andrés Felipe Castro Torres, Departamento Nacional de Planeación*

Using data from Demographic and Health Survey 2010 from Colombia and multivariate descriptive methods (correspondence analysis), this work compares school performance (scholar qualities) and socioeconomic welfare of women that became mothers at early ages (specifically from 10 to 20 years) and women that didn't. Differences among regions and residence zones (urban/rural) are established in order to claim for a differential design and implementation of public policies. Using results of the past years as a base line, we revisit teenage childbearing adding the regional approach. We establish the intensity and duration of consequences of teenage childbearing in terms of years of schooling, educational level and socioeconomic welfare of mothers. Finally, using qualitative information from interviews, we end this work proposing a discussion about the uses of these indicators as a sign of a successful life. The results of the discussion depend on regional characteristics and our theoretical perspective.

### **231. Socioeconomic and Spatial Determinants of Fertility amongst Young Women**

*Marta Mier Y Teran, Universidad Nacional Autónoma de México; Mario Martínez-Salgado, Instituto de Investigaciones Sociales, UNAM*

The main objective of the paper is to analyze the spatial patterns in the reproductive behavior of young women in Mexico in a context of deep social stratification. We study the spatial distribution of early fertility patterns and the effect of structural covariates at the municipality level. The data source is the 2010 Population Census. Women were asked about the date of birth of last child born alive. With this data, fertility rates for women aged 15 to 19 years are calculated for a 10% sample of 5.5 million women in these ages. The Census provides also data on structural conditions (family structure, nuptiality regime, education, labor, poverty) at the municipality level. Access to health services, including family planning, is obtained from data of the Ministry of Health for each municipality. First, we calculate the Moran's I statistic in order to test the global spatial autocorrelation in the fertility rates; also we analyze the clustering of fertility rates in the municipalities using Local Moran's I. Then we estimate Geographically Weighted Regression (GWR) in order to model the spatial variations of the effects of structural variables on fertility behavior. Our findings are expected to be useful inputs to efficient social policies in order to reduce fertility rates among young women.

### **231. Unintended pregnancies among adolescent girls living in poor urban slums: Evidence from the Transition to Adulthood (TTA) study in Nairobi, Kenya**

*Donatien Beguy, African Population and Health Research Center (APHRC); Joyce N Mumah, African Population and Health Research Center (APHRC)*

The main objective of this paper is to examine the levels of and factors associated with unintended pregnancies among young girls in two informal settlements in Nairobi city, Korogocho and Viwandani. We use data from a 3-year prospective survey that collected information from adolescents living in the two slums between 2007 and 2010. The analytical sample includes 945 adolescents aged 15-24 who have ever had sex. Findings show that overall, about 64% of the adolescents have ever been pregnant in their lives (73% for those aged 20-24 vs. 50% for those aged 15-19). In addition, 39% of pregnancies were unintended, with 22% being mistimed and 17% unwanted. At the bivariate level, younger adolescents, those living in Korogocho, those who have never been married, and those from Luo tribe are more likely to report an unintended pregnancy. Multivariate analysis shows a significant association between a set of factors including age at first sex, marital status, area of residence, ethnic group, relationship with first sexual partner and unintended pregnancy. These findings have policy implications for improving sexual and reproductive health outcomes among female adolescents living in such resource-poor settings.

### **232. Analyse des sources du changement dans la fréquentation scolaire des enfants au Tchad** *Younki Tchouaféné Matchoké, Fonds des Nations Unies pour la Population*

Cette communication examine les changements sociaux survenus dans la fréquentation scolaire au Tchad à partir de la méthode de décomposition. Elle montre les tendances d'évolution des niveaux de fréquentation scolaire ainsi que les sources à l'origine de ces changements. L'exercice central de cette analyse est de savoir si ces changements émanent des comportements des parents, des politiques mises en place ou alors de la modification de la structure de la population scolaire? La communication montre qu'au Tchad, les changements observés sont principalement dus aux politiques macroéconomiques mises en œuvre. En outre, les transformations de fréquentation scolaire, induites par les politiques macroéconomiques proviennent d'un effet de base. C'est la population globale, bénéficiaire de tels politiques, qui est le principal acteur du changement positif de la scolarisation. Ainsi, il est urgent pour les gouvernants d'accentuer et de renforcer la mise en œuvre de politiques centrées sur les populations surtout vulnérables, si l'on veut obtenir des changements sociaux solides et importants.

### **232. Educational Quality and Deprivation: Elasticity Comparisons Based on Reading Test Scores from PISA 2000 and 2009**

*Clarissa Guimarães Rodrigues, International Policy Center for Inclusive Growth; Eduardo L. G. Rios-Neto, CEDEPLAR - Universidade Federal de Minas Gerais*

The goal of this paper is to analyze the link between average, deprivation and inequality of reading test scores from 38 countries evaluated by the Programme for International Student Assessment (PISA), for the years 2000 and 2009. The primary contribution of the current study is to apply well-developed indices and techniques used in economic studies of poverty and inequality to some education data. One hypothesis is that the growth elasticity of educational deprivation reduction is greater than that typically found in economic studies. The reason for this is that the distribution of test scores tends to be more homogeneous as compared to income distributions. To measure deprivation in education we use the poverty metrics developed by Foster, Greer and Thorbecke (1983, 2010) including: 1) educational deprivation headcount index; 2) educational deprivation gap index; and 3) educational deprivation severity index. We define as 'poor in education' students who have neither acquired fundamental knowledge nor mastered the basic skills corresponding to their level of schooling. Our findings suggest that ambitious strategies to reduce educational

deprivation might have to combine both the increase in the average quality of educational system and some kind of distributive policy focusing on the lowest-skilled students.

### **232. Inequality of Opportunity among Indian Children in attending appropriate class as per their age up to Elementary level**

*Chandan Kumar, Indian Institute of Technology Roorkee*

Background: This paper examines the inequality of opportunity among Indian children in attending appropriate class as per their age up to elementary level (Std. I-VIII) of education during 1986–2008. The socioeconomic, regional and temporal perspective in underscoring the inequality of opportunity in time-bound completion of elementary education would be imperative to achieve universalization of elementary education in effective manner. Data & Methods: Data from the three rounds of the National Sample Survey on ‘Participation in Education’ conducted during 1986-87, 1995-96 and 2007-08 were analyzed. In order to assess inequality of opportunity in attending appropriate class at appropriate age among children across selected circumstance groups, the study used the Human Opportunity Index (HOI). The HOI synthesizes measurements of both the absolute level of opportunities in a society and how equitably those opportunities are distributed into a single indicator. Results: Adjusting potential socio-demographic and economic characteristics, the opportunity among Indian children in attending appropriate class as per their age up to elementary level has shown an increase of 20 percentage point during 1986-2008. The opportunity gap in gender and social group is catching up gradually due to increasing coverage rate in disadvantaged

### **232. The impact of educational homogamy on isolated illiteracy levels**

*Iñaki Permanyer, Centre d'Estudis Demografics; Albert Esteve Palos, Centre d'Estudis Demografics; Joan García-Román, Centre d'Estudis Demografics*

In this paper, we explore the impacts that education expansion and increased levels in educational homogamy have had on couples’ isolated illiteracy rates, defined as the proportion of illiterates in union that are married to an illiterate partner. First, we develop the methodology to decompose isolated literacy rates into two main components: the educational distribution of the spouses and the level of homogamy. Second, we use harmonized international census microdata from IPUMS and Demographic Health Survey data for 73 countries and 217 samples to investigate which of the two components is more important in shaping the level of isolated illiteracy. Our results indicate that the expansion of education has been more powerful than the increases in the tendency toward homogamy in its impact on isolated illiteracy rates. As the percentage of illiterates decreases over time, an increasingly large proportion of them marry literate individuals, showing that opportunities for intermarriage among illiterates expand despite the strengthening of homogamy.

### **233. Impact of the Spread of Mass Education on Domestic Violence against Wives**

*Dirgha Jibi Ghimire, University of Michigan; Willaim Axinn, University of Michigan*

This paper investigates the association between mass education and domestic violence against wives in rural Nepal. Previous research on domestic violence in South Asian societies reveals the important influence of prevailing patriarchal ideology and the subordinate status of women within the family. However, the recent spread of mass education is likely to have important consequences in the opposite direction. Using data from 1,778 currently married women and their husbands from the Chitwan Valley Family Study in Nepal, we test the consequences of spread of mass education for domestic violence against wives. The results show that women’s childhood access to school, their parents’ schooling, and women’s own and their husbands’ schooling each tend to reduce wives’ likelihood of experiencing domestic violence. Indeed husbands’ education is a particularly powerful force reducing domestic violence against wives. These associations explain the historical declines in the incidence of domestic violence against wives in Nepal.

### **233. Measure of the Gender Norms Regarding Violence against Women and their Influences on Women Autonomy in Rural Africa: A Multi-country Analysis**

*Visseho Adjiwanou, University of Cape Town; Thomas K. LeGrand, Université de Montréal*

The autonomy of the woman emerges as a central and separate dimension to consider in understanding health behavior. In fact, several authors have highlighted its influence on the use of maternal health care in developing countries. However, if the individual autonomy is relevant, it nevertheless deserves to be placed and analyzed within the social context in which the woman lives. Not only the social context and their norms have a direct influence on the use of care, but in addition, it shapes and structures the women autonomy. Using DHS data from Ghana, Kenya, Tanzania and Uganda, we measure the norms related to violence against women and assess their impact on women autonomy. Confirmatory Factor Analysis show a good model fits for the measure of the latent variable related to violence against women (Cronbach's alpha > 0.8; RMSEA =0.96). In addition, controlling for women attitudes toward wife beating, we found that women who live in area where acceptance of wife beating is high are more likely to be of low autonomy.

### **233. Prevalence and correlates of experience of intimate partner violence among men and women in Eastern DRC**

*Stella Babalola, Johns Hopkins University; Rose Zulliger, Johns Hopkins University*

The prevalence of intimate partner violence (IPV) in the Democratic Republic of Congo is among the highest in the world. The data analyzed in this paper are derived from a 2012 survey in two provinces in Eastern DRC: Nord Kivu and Sud Kivu. First, we assessed the prevalence of the various forms of intimate partner violence (physical, sexual and emotional) for men and women. Subsequently, we used logistic regression to identify the factors associated with recent experience of IPV for each sex. The data showed that the various forms of IPV were common among men and women in the study provinces. More than one quarter of men and 40% of women have reportedly ever experienced physical IPV while 15.7% of men and 25.1% of women have ever experienced sexual form of IPV. Moreover, the various forms of IPV were strongly correlated, such that many men and women had been exposed to multiple forms of IPV in their lifetime. The factors associated with an experience of IPV differ depending on the type of IPV and by sex. The data suggest that addressing IPV in DRC will require a comprehensive approach. Programs focusing on improving partner communication, reducing alcohol abuse and strengthening community structures for IPV reduction and those that specifically target people with low education should be part of this comprehensive approach.

### **233. The Most Important Factor Needs Attention in Intimate Partner Violence: A Case of Bangladesh**

*Towfiqia Mahfuza Islam, Tokyo Medical and Dental University; Md. Ismail Tareque, Tokyo Medical and Dental University, Japan; Kazuo Kawahara, Tokyo Medical and Dental University; Makiko Sugawa, Tokyo Medical and Dental University; Nazrul Hoque, University of Texas at San Antonio*

Which factor needs the highest attention to reduce IPV in Bangladesh is the aim of this study. We used data from currently married women only of age 15-49 years from Bangladesh Demographic and Health Survey 2007. Univariate, bivariate techniques and multivariate logistic regression were performed. The results shows that majority of the respondents are Muslim and live in rural areas. 24.36% women reported experiencing of any form of IPV. The most experienced form is slap and the main reason reported is without any reason. The youngest, working women are more likely to experience IPV than their respective counterparts. Muslim respondents are significantly more likely to report experiencing violence. Spousal violence is less for respondents with more marital duration; and with the increase of ages at first marriage IPV decreases. Unskilled labors reported

experiencing more violence than other occupational groups; and respondents also reported having more IPV with husbands from unskilled labor group. Spousal violence is more among those respondents whose mothers were ever been beaten by their father, and who thinks wife beating is justified to them. Finally father ever hit or beat respondent's mother is found to be the most significant factor for IPV which needs urgent attention to reducing this important social problem.

#### **234. Effect of children composition on the sex of next birth in the context of low fertility in rural China**

*Quanbao Jiang, Institute for Population and development Studies, Xi'an Jiaotong University; ying li, Xi'an Jiaotong University; Xiujun Tai, Shanxi Normal University; Stuart Basten, University Of Oxford*

Previous studies of China's exceptionally high sex ratio at birth have emphasized the prevailing national and regional fertility policy as well as the gendered composition of children ever born. Little attention, meanwhile, has been paid to the effect of fertility intentions of the sex of next birth for a household. In the paper, we use the data from China's 2001 national family planning and reproductive health and hierarchical models to study how macro factors (mainly fertility policy) and micro factors (mainly fertility intention and children composition) affect the sex of next birth. We find that fertility policy exerts a significant effect on the sex of next, but this effect is intertwined by children composition. For those having had a son (or sons), the policy exerts no effect, but for those with only daughters, the effect is quite significant. Crucially, however, fertility intention as independent from fertility policy has a significant effect on the sex of next birth.

#### **234. Exceptionally high sex ratios at birth among Mainland Chinese giving birth in Hong Kong SAR**

*Stuart Basten, University Of Oxford; Georgia Verropoulou, University of Piraeus, Greece*

China has one of the most skewed sex ratio at birth (SRB) in the world. However, while the SRB in Hong Kong (HK) has historically been much lower (~106), it has recently seen a dramatic increase.

We use a very large, detailed data-set (N 850,331) of all recorded births in HK between 1995 and 2009 to calculate new SRBs for the territory both by parity and, by virtue of the large sample size, by a much more detailed set of immigrant partnership variables.

At parity one, the SRBs of both HK born couples and other immigrants are broadly similar. At parity two, the SRB of HK born parents is 107.8. Among recent arrived immigrants from Mainland China, this rises to 127.1. At parities three and four, the HK born SRBs rise to 110.6 and 116.6, while the recently arrived Mainland Chinese SRB is 216.0 and 264.3.

HK has been serving as an outlet for 'elite Mainland couples' able to afford the costs of giving birth there to circumvent the both anti-prenatal sex selection legislation and family planning regulations to achieve the desired effect: a male offspring.

#### **234. Falling Sex Ratios and Emerging Evidence of Sex Selective Abortion in Nepal**

*Melanie Frost, University of Southampton; Mahesh Chandra Puri, CREHPA Nepal; Andy Hinde, University of Southampton*

Abortion was legalised in Nepal in 2002 and the government began providing comprehensive abortion care services in 2004. Prior to that, the sex ratio at birth remained within normal limits, though other indicators suggested extremely high levels of son preference. Changes in the sex ratio at birth since 2004 may indicate the extent to which sex selection has resulted from the introduction of abortion services. Birth-order specific conditional sex ratios (CSRs) were calculated using data from four Nepal Demographic and Health Survey (NDHS). CSRs were looked at over time as well as for different sub-groups in order to assess trends and see which women were most likely to have sex selective abortions. During 2007-10 the CSR for second-

order births where the first born was a girl was just 742 (girls per 1,000 boys). Before abortion was legalised the same CSR was 1021. The CSR was lowest amongst educated women and richer women, especially in urban areas. Indeed, just 325 girls were born for every 1,000 boys amongst the richest urban women during 2006-2011. The abrupt fall in certain CSRs witnessed in Nepal after abortion was legalised indicates that sex-selective abortion has become relatively common in certain sections of Nepali society.

### **234. Sex Ratio at Birth(SRB) Transition and the Diffusion Story: Evidence from South Korea**

*Heeran Chun, Jungwon University; Il-Ho Kim, Social and Epidemiological Research Centre for Addiction and Mental Health,; Young-Ho Khang, University of Ulsan College of Medicine*

This study aims to examine the trends in social and geographical variations in SRB in Korea. The data was taken from “Vital Statistics Birth” for the period from 1981 to 2005. We computed the annual male proportion of live births according to mother’s education, mother’s occupation and geography, demonstrating three year moving average. Logistic regression analysis was employed to estimate the odds ratios of male birth according to social and residential groups. SRB in Korea was more prominent in higher social groups and Seoul dwellers until the early 1980’s, but the ratio reversed to be higher in the less educated, manual-job, and country-living mothers since the late 1980’s. The socioeconomic and geographical gap in SRB was most notable in the early 1990s when the SRB in the country was at its peak, and from the late 1990s onwards, the gap has since narrowed. This unique South Korean phenomenon of a social and geographical reversal pattern in SRB supports the diffusion theory of people adopting medical technology for sex selective abortion, suggesting a model to predict the future trends in countries exhibiting an imbalance in SRB.

### **235. Europe-wide fertility trends since the 1990s: turning the corner from declining first birth rates**

*Marion Burkimsher, Université de Lausanne*

Previous work on the demographic explanation for recent rises in the fertility rates in Europe concluded that the main driver was declining postponement, leading to higher peak rates (Bongaarts and Sobotka, 2012). Using data from 15 countries in the Human Fertility Database, we found that this explanation was insufficient. We then investigated other possible explanations of the rise. An increase in intensity (i.e. rise in peak rates) was seen in some countries, but not all. Increased variability in age at first birth (which adds to the width of the fertility curve) has been increasing across all the countries studied, although this trend was already underway in the 1990s. Two parallel trends have led to a widening of the fertility curve: a slowing in the decline of first births to young (pre-modal age) mothers and a significant growth in older (post-modal age) entry into motherhood. The turning point from declining first birth fertility rates to increase can be explained by the interplay of ongoing increases in the width of the fertility curve (more variable timing) together with a stabilisation or, in some cases, a modest increase, in the peak rate (intensity). This explanation is valid for both Eastern and Western European countries.

### **235. Disentangling the quantum and tempo of immigrant fertility**

*Ben Wilson, London School of Economics and Political Science (LSE)*

Migrant fertility has become an increasingly prominent explanation for recent fertility change. Immigrant Total Fertility Rates (TFRs) are consistently higher than native TFRs in the majority of European countries. However, research has cast doubt on the use of tempo-distorted measures of fertility for evaluating the contribution of immigrants to aggregate fertility. Furthermore, previous research has almost exclusively analysed incomplete fertility profiles, an approach which provides little insight into the absolute impact of immigrant fertility.

Considering the UK, this research uses survey estimation and count regression techniques to disentangle tempo variation from the quantum of immigrant fertility. This approach is crucial for testing migrant fertility hypotheses because migration is known to influence the timing of childbearing. The results support several hypotheses, with evidence of disruption followed by elevated fertility, particularly for recent cohorts of women arriving after age 25. This may be explained by selection, anticipation, or adaptation. However, the results show no evidence of disruption for immigrants from Jamaica or Bangladesh, suggesting cultural maintenance or socialisation for these groups. The paper concludes with an appraisal of the method used here, and its benefits for future research.

### **235. Fertility decline in Uruguay (1996 – 2011). Quantum and tempo effects in a middle-income country with below replacement fertility**

*Wanda Cabella, Facultad de Ciencias Sociales, Universidad de La República; Ignacio Pardo, Programa de Población, FCS, Universidad de la República (Uruguay)*

Fertility decline below replacement level is a widely extended phenomenon in many countries. In Uruguay, the situation is rather peculiar: this is a medium-income Latin American country which does not belong to the developed world but whose population dynamics is similar to that of Western European countries (below replacement fertility and advanced population aging). The purpose of this paper is to study the nature of the fertility decline in Uruguay by using estimates which have not been used in the past. Mainly, by decomposing tempo and quantum effects in period fertility indicators and estimating parity progression ratios. The aim is to understand to which extent the decline in Total Fertility Rate (TFR) can be attributed to the fertility level and to which extent to the fertility calendar. Given the heterogeneous nature of reproductive behaviour of Uruguayan women, it is necessary to know in which segments these changes are being processed; among other reasons, given its importance for the formulation of policies based on more solid foundations than those given by the usual synthetic indicators.

### **235. Tempo and quantum of fertility in Iran: An Application of the Synthetic Parity Progression Ratio Method**

*Meimant Hossein Chavoshi, Australian National University; Peter Francis McDonald, Australian National University; Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University; Arash Rashidian, Tehran University of Medical Sciences*

After Iran's sharp fertility decline during 1990s, fertility decline slowed down during 2000s and TFR reached 1.8 in 2011. Following two decades of fertility control policies, in 2012, the Iranian government announced pronatalist policies to increase fertility. This hasty decision stems from misunderstandings that such observed low fertility will lead to negative population growth in the foreseeable future. However, cross-sectional total fertility rate can be confounded by changes in the timing of births across women's lifetimes (tempo) as well as by changes in the numbers of children that they have by the time they end their childbearing (quantum). In our earlier work, the 2000 Iran DHS was utilized to measure time trends in synthetic parity progression ratios and measures of starting, spacing and stopping of childbearing during 1980 to 2000. This paper aims to explore tempo and quantum effects on fertility over the last two decades to uncover a clear picture of current low fertility and its implications. Synthetic parity progression method is applied to fertility history of 35305 ever-married women 15-54 interviewed in the 2010 Iran MIDHS. Findings are expected to confirm age-based measures of fertility resulted from the 2011 census, and help government to make appropriate decisions.

### **236. Fertility Intentions and Use of Family Planning in Northern Malawi**

*Aisha Dasgupta, The London School Of Hygiene And Tropical Medicine; Albet Lazarous Nkhata Dube, Univ of Malawi; Levie Gondwe, The Karonga Prevention Study; Ruth O Ngwalo, Karonga*

*District Health Office; Keith Branson, The London School of Hygiene and Tropical Medicine; Bagrey Mdoni Ngwira, College of Medicine, University of Malawi; Frank Taulo, The College of Medicine, University of Malawi; Basia Zaba, London School of Hygiene and Tropical Medicine (LSHTM); Amelia C Crampin, London School of Hygiene and Tropical Medicine (LSHTM)*

Women in Malawi bear on average six children, with many unintended pregnancies. Although 42% of married women use modern methods of contraception, 26% have an unmet need. The Karonga Prevention Study operates a demographic surveillance site (DSS) in northern Malawi. An innovative method was devised for collecting family planning (FP) data using patient-held records (a "FP card") to build a prospective longitudinal dataset, allowing exploration of continuity of use and provider/method-switching, which can be linked to the DSS database. All 8,176 women aged 15-49 living in the DSS were offered a FP card. When a woman receives FP, the health provider records on the FP card the date, method/service received and provider-type. After one year, the FP cards will be collected for analysis.

Data collection is at an early stage but recruitment records show 6,999 women (86%) received a FP card. An interim audit of the FP cards showed that 91% of FP users have data available. Data on FP usage from April 2012 to April 2013. will be presented at the conference.

FP data usually come from surveys or routine data. This alternative method will enable better understanding of how women "shop around" for FP services, and whether they maintain continuity of use.

### **236. Hormonal Contraceptives, Duration of Use and the Experience of Side Effects in Southern Ghana**

*Claire E Bailey, University of Southampton*

Side effects have been shown to be an important factor in the lack of adoption of contraceptive methods, particularly modern hormonal methods, however little is known about the actual experience of side effects and their influence on contraceptive use dynamics. The aim of this paper is to explore the association between the experience of side effects, the type of method, primarily pill and injectable, and the duration of episodes of use. This study uses calendar data from a longitudinal survey conducted in Southern Ghana containing 8937 women-months of contraceptive use along with concurrent monthly reporting of side effects experienced. Descriptive statistics and single decrement life tables modelling the hazard rates of discontinuation are used for the analysis. The results show that pill and injectable are roughly the same in respect to the reporting of side effects with 11.5% and 10.1% of months of use of each method respectively with side effects reported. The median length of injection episodes is almost double the length of pill episodes; however the length of pill episodes is not affected by side effects whereas for injectables the length of episodes is significantly shorter when side effects are experienced than when they are not.

### **236. Socio-demographic Differentials and Determinants of Contraception Methods Choice among Currently Married Women in India**

*Sanjit Sarkar, International Institute for Population Sciences (IIPS); Rakesh Kumar Singh, International Institute for Population Sciences (IIPS)*

The study is an attempt to understand the contraceptive use pattern and method's choice among currently married women in India. The present study has been utilized DLSH-3 data which is a nation wide survey and collected information from 643944 ever married women aged 15-49 years regarding family planning, contraception, HIV/RTI and other socio-demographic aspects. Bi-variate and Multivariate analysis have been used for this study. Result shows contraception use increases with women's age. Prevalence of contraceptive usages is higher among Hindu religion, women having no sex preference of child and women belonging in richest wealth quintiles. Women age is found significant determinant of contraceptive methods choice. Condom use is

highest in the youngest age. Female sterilization is higher among poor women where as condom use is higher among richest women. Rural women are 17 percent less likely and working women are two times more likely to choose condom over sterilization.

### **236. Uptake of Contraception following childbirth: An Opportunity to Address High Unmet Need in Pakistan**

*Saman Naz, Alif Ailaan; Arshad Muhammad Mahmood, Population Council*

In Pakistan the contraceptive prevalence rate is stagnant at 30% for almost a decade along with high unmet need for contraception (25%) and unwanted fertility as one child per woman (PDHS, 2008). The family planning program of Pakistan has long been focusing on small family size. Recently the focus of this program has been shifted to the spacing between births. It is therefore important to study the behavior of couples regarding contraception following childbirth. Using the contraceptive calendar data from the FALAH baseline survey 2008-09 from the 29 districts across Pakistan, we study the duration of uptake of contraception after childbirth by using life table techniques. We also study the type of contraceptive method adopted and the differentials in the uptake. The effect of desire for more children, antenatal care visits and the place of delivery on the subsequent contraceptive uptake was analyzed using Cox Proportional Hazard Regression Models. Results show that less than a quarter of women adopted an FP method within 6-months of childbirth and desire to limit childbearing was significantly associated with higher uptake. The findings of this study will highlight the importance of introducing the postpartum family planning use in the FP program of Pakistan.

### **237. How Does the Context of Reception Matter? : The Role of Residential Enclaves on Maternal Smoking during Pregnancy for Mexican-origin Mothers**

*Aggie J. Noah, Pennsylvania State University; Carla Shoff, The Pennsylvania State University; Nyeshia Cheyenne Black, Pennsylvania State University; Corey Sparks, University of Texas San Antonio*

Although immigrant women are less likely to smoke compared to Non-hispanic whites and U.S. natives born of same ethnic origin, previous studies indicate that acculturation is positively associated with maternal smoking during pregnancy. The increase in maternal smoking during pregnancy with acculturation is often attributed to the downward trajectory within the segmented assimilation framework. However, theoretical frameworks (e.g., acculturation) that emphasize cultural explanations have used a “zero-sum game” approach which does not provide a comprehensive understanding of complex acculturative processes of the immigrant experience. To incorporate the structural factors in the context of reception in understanding maternal smoking during pregnancy of Mexican-origin women in the United States, we draw from the emerging scholarship on how residential segregation affects health. Our preliminary results support the protective effect of immigrant enclaves for Mexican foreign-born women. On the other hand, interaction with non-Hispanic white at the contextual level is associated with the increased odd of maternal smoking during pregnancy.

### **237. Mexican migration and birth outcomes: expanding the lens to include receiving and sending communities**

*Kate H. Choi, University Of Western Ontario; Erin Hamilton, University of California, Davis*

Despite their relative socioeconomic disadvantage, infants born to Mexican immigrant mothers in the United States have health outcomes that are similar to non-Hispanic whites and better than blacks. This pattern has been termed the epidemiologic paradox because it challenges prevailing understandings of racial/ethnic disparities in health. Although the epidemiologic paradox is well-documented, the mechanisms underlying the paradox remains poorly understood. We pool vital statistics data from Mexico and the U.S. to disentangle to what extent variations in birth outcomes

between Mexican immigrants and non-migrants in Mexico are attributable to (1) migrant health selectivity and (2) other forms of migrant selectivity, namely age and region of origin. To do so, we will first determine whether infants born to Mexican immigrants in the US have lower rates of birth weight and pre-term births than the entire population in Mexico. Next, we will determine whether the health advantage of Mexican immigrants (over the Mexican population) persists once we age standardize the rates of low birth weight and pre-term births. Third, we will limit our sample of non-migrants in Mexico to those living in communities with high levels of migration and compare their birth outcomes with those of Mexican immigrants in the United States.

### **237. Migration and Mental Health: the immigrant advantage revisited**

*Jenna Nobles, University of Wisconsin at Madison; Luis Rubalcava, Spectron Desarrollo S.C.; Graciela Teruel, Universidad Iberoamericana*

Mexican immigrants systematically exhibit better mental health than U.S. born residents, including those with Mexican heritage. The robust finding is often attributed to the healthy migrant hypothesis. This argument, however, falsely presumes that the Mexican and U.S. populations have similar mental health traits. In this paper, we analyze data from a rare, nationally-representative sample of Mexicans surveyed in Mexico prior to migration and after arrival in the United States. Tests of within-person change allow us to assess 1) how migrants are selected on mental health and 2) how the process of migration changes mental health. We pay particular attention to gender differences in these processes. Our findings contradict the positive welfare interpretation of the mental health advantage observed among migrants. We observe that migration actually worsens the mental health of migrants and more so among women. We find no evidence of positive selection on mental health, further countering the “healthy migrant” hypothesis. Gender differences are discussed in the context of literature on migrant welfare.

### **237. Probabilities of transition among health states: a comparison between older immigrants and native-born people in Europe**

*Donatella Lanari, University of Perugia; Odoardo Bussini, Università di Perugia*

We aim to investigate the probabilities of transition among health states for middle-aged and older adults and examine how they vary by age, sex and immigrant status. The longitudinal dimension acquired by the Survey of Health, Aging and Retirement (SHARE) allows us to investigate how successful is the immigrants’ aging with respect to natives. We hypothesize that immigrants are more likely to experience a deterioration of health during aging, that is, the probability that a foreign born living in specific countries will move from a “healthy state” to a “sick state” is higher with respect to non-immigrants, especially for older adults. The health measures included self-rated health, depression, chronic diseases and ADLs. Preliminary results show that transition probabilities varied by age, gender and immigrant status. In almost all domains of health, the probability that older immigrants’ health status deteriorated was higher with respect to natives, even if results emphasize a large heterogeneity found among immigrants’ groups. The analyses of the changes over time in different aspects of immigrants health status is very interesting for policy makers so that clearly defined public interventions can be adopted to improve their health and planning relevant health services.

### **238. Do racist attitudes affect the u.s. mortality? – Multilevel and age-period-cohort analysis**

*Yeonjin Lee, University of Pennsylvania; Peter Muennig, Columbia University; Ichiro Kawachi, Harvard University*

Many studies have focused on whether racism harms the health of targeted individuals. However less is known about whether and how racial prejudice harms the health of all community members including those who harbor such prejudice across time. The aim of this study is to examine racism as a risk factor harmful for the health of communities within which it occurs. We used data from

the 1985-2002 General Social Survey (GSS), a representative sample of the U.S. non-institutionalized population that included questions about racist attitudes towards blacks. We prospectively linked the GSS data to mortality data through 2008 via the National Death Index (NDI) and assessed the effect of racial prejudice on all-cause mortality of individuals above age 18 nested within 384 U.S. Primary Sampling Units using multilevel models and age-period-cohort models. The study reveals that both black and white individuals living in communities with higher levels of racial prejudice had increased mortality rates compared to residents living in communities with less racial prejudice. This association was robust to controls for other individual- and community-level socio-economic characteristics. This association also varies by cohort and period.

### **238. Does the ethnic composition environment matter ? Peer effects on fertility among foreign wives in Korea**

*Doo-Sub Kim, Hanyang University; Yoo-Jean Song, Dong-A University*

The main purpose of this paper is to explore socio-demographic differentials and peer effects on fertility among foreign wives in Korea. Attention is focused on examining the effects of the number of foreign wives and the ethnic composition of residential area on the level and tempo of fertility of foreign wives. Favorable ethnic composition of the residential area and increased accessibility to other foreign wives are likely to reduce the real or perceived social disadvantages, constraints and insecurities of foreign wives that might otherwise lead to lower fertility. Another question to be examined is whether and to what extent foreign wives show distinctive levels of fertility according to household composition. Micro-data from the 2009 Korean National Multi-culture Family Survey and Marriage and Divorce Registration Data for 2009-2011 are analyzed. Preliminary results of the analysis show that the ethnic composition environment exerts an independent effect on fertility, apart from socioeconomic and demographic variables. Propensity to have children *ceteris paribus* rises substantially among foreign wives who live in an area with a large population of transnational couples. Peer effects tend to be stronger when a foreign wife lives with her husband's parents. Further evidence is found to be consistent with peer effects.

### **238. Under-five Mortality in Nigeria: Effects of Neighbourhood Contexts**

*Sunday A Adedini, University of the Witwatersrand, South Africa & Obafemi Awolowo University, Nigeria; Clifford Obby Odimegwu, University of the Witwatersrand*

Despite the global decline in childhood mortality, under-5 mortality remains high in Nigeria. With about 1 in 6 children dying before the age of 5, Nigeria is not on track to achieve the Millennium Development Goal 4. While many studies on childhood mortality in Nigeria have established individual level factors as important predictors of infant and child mortality, similar studies on the effects of neighborhood contexts have been minimal. Hence, this study examines the effects of neighborhood contexts on under-5 mortality in Nigeria. The study utilized 2003 and 2008 Nigeria Demographic and Health Survey data. Cox regression analysis was performed on a nationally representative sample of 6028 (2003) and 28,647 (2008) children, ( $\alpha=0.05$ ). Results established region of residence, place of residence, ethnic diversity, neighborhood infrastructures, community education and health care contexts as important determinants of infant and child mortality in Nigeria. For instance, 2008 data showed that being born or raised in poor neighborhoods (HR:1.23,  $P<0.05$ ), rural communities (HR:1.19,  $p<0.05$ ), North-east (HR:1.56), was associated with elevated hazards of dying before age 5. Policies to achieve under-5 mortality reduction in Nigeria must involve community-level interventions aimed at improving child survival in the deprived neighborhoods.

### **238. Understanding Differences Between Person and Place Based Neighborhood Interventions through Direct and Indirect Effects**

*Noli Brazil, UC Berkeley*

Researchers have recently relied on person based randomized interventions to estimate the effects of a neighborhood on a variety of outcomes. An alternative strategy is to implement an intervention at the neighborhood level such that whole communities rather than individuals are randomized into better conditions. I explore the efficacy of each approach by decomposing the total intervention effect into natural direct and indirect effects. A comparison of these effects may provide insight into the precise mechanisms that person and place based interventions work through to impact individual well being. Delineating when each type of treatment yields larger effects provides policymakers insight into their appropriateness given overarching goals.

### **239. Household and Environmental Conditions Influencing Health and Survival of Children in Northern and Southern Regions of India.**

*Ankit Anand, International Institute for Population Sciences (IIPS); Duryodhan Sahoo, International Institute for Population Sciences (IIPS)*

The child health situation in India has been improving slowly over the past few years and remains a major development challenge for India. Highest number of child deaths in world takes place in India. Nutrition level has not much improved from NFHS-2 to NFHS-3. The main purpose of the study to assess and compare the overall health of children in northern and southern states of India and to examine the relationship between several household and development related environmental factors to the health and survival of children in rural parts of two different northern and southern regions of India. Data from NFHS-3 has used for these purposes. Several indicators of nutrition and morbidity are used. Poor sanitation and electricity facilities significantly reduce the chances of children to secure better health in the both the regions. Poor water condition is also found to be significant impact on wasting among children. Use of non-solid cooking fuel is also associated with survival and health situation of children. Education and economic status are two very important determinants of child health and survival. Non nuclear families are also found to be better than nuclear families in northern region but opposite is true for southern region.

### **239. Vulnerability of Children to Arsenic and its Health Implications: A Case Study of West Bengal, India**

*Mohua Guha, Independent Consultant; Kamla Gupta, International Institute for Population Sciences*

Children are particularly vulnerable to many environmental threats, including a contaminated physical environment. This special susceptibility of children, however, is not confined to the biology of growth and development. A variety of external factors, at macro as well as micro level, influence the exposure of children to various environmental threats that consequently affect their health. This paper examines the possible impact of arsenic (via drinking water) on children between the ages 0 and 14 years, as the risks tend to be the greatest during these ages. A cross-sectional case-control study was conducted in Murshidabad district, West Bengal. From the 367 surveyed households, completed information on 471 children could be collected including the anthropometric component. In case villages, nine percent of the children exhibited any clinical symptoms of arsenicosis and it was found that the corresponding mothers had exposure of more than eight years and all showed moderate skin manifestations. The prevalence rate was 26 percent in case of male children compared to 20 percent for female children in the high category of arsenic concentration level. A clear dose-response relationship was also found, independent of all background characteristics. The progression of symptoms among children was closely related to BMI and age.

### **239. Does ecological zone matter for childhood mortality differentials in Nepal?**

*Uma Maheswararao Atila, Andhra University; Srinivas Goli, International Institute for Population Sciences (IIPS); Aparajita Chattopadhyay, International Institute for Population Sciences*

Based on its topographical, climatic factors and biomes Nepal is divided into three ecological zones [Mountain, Hill and Tarai]. Does the variation in ecology have direct influence on health of Children. To address this question, the present study used the recent Nepal DHS-2011 survey data. The results revealed that disadvantageous position of the mountain region in terms of child survival is consistently established through all three methodological exercises carried out in this study. Bivariate results revealed that across the three ecological zones, the Mountain zone experiences considerably higher childhood mortality rates. Cox proportional hazard model estimates also revealed that relative risk of dying for all groups of children in Mountain Ecological zone is greater compared to Hill and Tarai. Oaxaca decomposition results show that the variables considered can explain only 46 percent variation of mountain and hill differences in mortality it means there could be some direct environmental factors which are playing role in differential mortality, Variations are explained by some important demographic factors such as less than 20 months birth interval of women, work status of the mother, mother's education, poor economic status etc.,

### **248. Determinants of child Anthropometrics in India: A quantile regression analysis**

*Uttamacharya Uttamacharya, International Institute for Population Sciences; Perianayagam Arokiasamy, International Institute for Population Sciences; Raj Kumar Verma, International Institute for Population Sciences, Mumbai, India*

Reduction in child malnutrition is central to economic and social development in any country as it has dire ramifications to physical, psychological and mental development of individuals over the life course. Child malnutrition is also associated with higher morbidity and mortality incidence. Therefore, it is imperative to have knowledge of its correlates and determinants. Examination of determinants of child nutrition at different points of its distribution has better policy implications than investigating predictors on average value. Using NFHS-III (2005-06) data, this study investigates determinants of nutritional status -measured by standard anthropometric indicators- of children aged 0-59 months in India using quantile regression approach. The study documents positive association of household wealth and parental education with child nutritional status, however, the gradient becomes less steep at higher quantiles of conditional distribution of anthropometric indicators. Child characteristics specifically birth order and age are negatively associated with child anthropometrics and effect of these increases quantiles.

### **248. Does the community SES modify the household-level effects on child malnutrition in the Empowered Action Group states of India?**

*Akanksha Srivastava, International Institute for Population Sciences, Mumbai*

Though empirical research has established the household wealth and maternal characteristics as significant predictors of child malnutrition, little is known about the role of community and parental attributes in explaining child malnutrition in India. The aim of this paper is to examine the interplay of community and household factors in explaining malnutrition among children in the Empowered Action Group (EAG) states of India. The unit data from National Family Health Survey (NFHS) 3 is used in the analysis. Bi-variate analyses, concentration index and multilevel models are used to understand the patterning and contextual effects of child malnutrition in the EAG states. Three dependent variables, weight-for-age, height-for-age and weight-for-height are analysed with respect to community socioeconomic status (SES), household wealth and social status. There exist a socioeconomic gradient in child malnutrition in the EAG states. Controlling for household SES and maternal and child covariates, community SES was a significant determinant of childhood malnutrition in the EAG states. Also, the cross level interaction of

household social status and community SES was significant in the EAG states but not in the non EAG states.

#### **248. Sibling Composition and Child Malnutrition in South Asia, 1992-2007**

*Prashant Kumar Singh, International Institute for Population Sciences (IIPS); Sulabha Parasuraman, International Institute for Population Sciences*

This study assesses the trends in child malnutrition by older surviving sibling composition during 1992-2007 in three South Asian countries, namely Bangladesh, India and Nepal. This study utilizes data from three rounds of Demographic and Health Surveys and considers weight-for-age as an indicator of child malnutrition based on 2006 WHO Standards. Combinations of sex composition of surviving older siblings were constructed. Cochran-Armitage and Chi squared statistics were applied to test linear and nonlinear trends respectively. Although child malnutrition declined during 1992-2007, result show an unacceptably higher prevalence of malnutrition in India (40%), followed by Bangladesh (37%) and Nepal (35%). Malnutrition has been lowest among boys and girls who did not have any older surviving siblings. However, the highest malnutrition was observed among those boys and girls who had at least one older surviving brother and sister. Findings confirm that not all girls and boys are treated equally, and there is a clear pattern of selective neglect in child malnutrition during 1992-2007.

#### **248. The household double burden of malnutrition: a multilevel analysis of low and middle income countries**

*Katherine Bates, London School of Economics; S V Subramanian, Harvard School of Public Health*

The paper addresses the impact child ‘dysnutrition’ (a child that is both stunted and overweight) has on the understanding of the Household Double Burden of Malnutrition (HHDBM - stunted child overweight mother pairs), by assessing the definition of a HHDBM as well as exploring the socioeconomic explanatory pattern of its development. In addition pre and post-natal hypotheses for the development of a HHDBM are explored. A cross-sectional analysis of nationally representative samples from 2000 onwards will be conducted. 72 Demographic and Health Surveys for low and middle income countries are used, containing anthropometric data on weight and height for both mothers and under-fives. Multinomial multilevel regression models are used to explore the HHDBM and its determinants.

#### **249. Ambient temperature in utero and cold-related adult mortality in a Swedish cohort, 1915 to 2002**

*Tim-Allen Bruckner, University of California at Irvine; Gerard van den Berg, Mannheim Universitat; Ralph Catalano, University of California, Berkeley; Kirk Smith, University of California, Berkeley*

For all climatic regions, mortality due to cold exceeds mortality due to heat. A separate line of research indicates that lifespan after age 50 depends on season of birth. This and other literature implies that ambient temperature in utero may influence cold-related mortality later in life. We use data on over 13,500 Swedes (from 1915 to 2002) to test whether cold-related mortality in adulthood varies positively with exposure to unusually benign ambient temperature in utero. We specify a counting process Cox proportional hazards model to analyze the two leading causes of cold-related death: ischemic heart disease and stroke. Results indicate an increased risk of ischemic heart disease mortality during cold spells among persons exposed to relatively warm gestations. We, however, observe no relation for stroke mortality. The ischemic heart disease findings provide the first evidence that temperature during gestation— independent of month of birth—affects cold-related mortality later in life.

### **249. Lasting effects of the Spanish flu on income and health in later life. The case of Southern Sweden.**

*Jonas Helgertz, Centre for Economic Demography, Lund University; Tommy Bengtsson, Lund University*

This paper examines the effects of exposure to the Spanish flu during infancy and in-utero, identified as critical periods in the physiological development of the individual, on socio-economic position and health in later life. The data used is from the Scanian Economic-Demographic Database, which includes individual level longitudinal data, both demographic and economic, for five rural parishes in southern Sweden, from the nineteenth century until today. In this paper we focus on the birth cohorts born between 1912 and 1925. We have previously shown that those born immediately before the Spanish flu and exposed in the first year of life are less able to reach higher socio-economic positions than cohort born before or afterwards (Bengtsson and Helgertz 2012). In this paper we expand this analysis by following these cohorts until later in life to examine lasting health impacts of the Spanish flu. Doing so we take both direct and indirect effects—via income and socio-economic position—into account by making use of a structural equation modeling approach. The overall finding is that exposure to the Spanish flu in first year of life affects both economic outcomes and health in older ages, and that health is affected directly, not via income and socio-economic position.

### **249. Pathways to Exceptional Longevity: Effects of early-life and intermediate factors on later-life mortality**

*Valerie Jarry, Université de Montréal; Robert Bourbeau, Université de Montréal; Alain Gagnon, Université de Montréal*

A substantial body of literature has focused on early familial life as a source of longevity differential in very old age. The channels through which early life environment is hypothesized to influence mortality in later life are diverse and could be direct or indirect. In this paper we discuss early-life factors which could affect an individual's chance to reach the advanced ages, with a particular focus on siblings of centenarians. Using an event-history database that links age at death of individuals to their childhood characteristics gathered from the 1901 and 1911 Canadian census records and to their adult characteristics, we address two questions: Are early-life conditions associated with longevity among the oldest old; and Do adult SES and marriage mediate the effect of early-life environment on later life survival? Non-parametric analysis are performed to estimate the effect of each early-life and adult variables using the Kaplan-Meier estimator as well as gender-specific proportional hazard models with a Gompertz specification of the risk of mortality. The results of this study will shed light on the extent to which the effect of early life conditions on mortality later in life is mediated by the attained socioeconomic position in adulthood or marital status.

### **249. The Direct and Total Effects of Childhood Conditions on Current Health in Oldest-old are Stronger than that in Young-old**

*Ke Shen, Fudan University, Shanghai; Yi Zeng, Duke University And Peking University*

**Objectives.** This article examines whether adverse childhood conditions have lasting effects on health status at advanced ages both directly and indirectly through adult socio-economic status among Chinese oldest-old and young-old. **Methods.** The data is derived from 2008-2009 wave of Chinese Longitudinal Healthy Longevity Survey, including 12,281 oldest-old aged 80+ and 4,285 young-old aged 65-79. Structural equation models are applied to estimate the effects. **Results.** Adverse childhood conditions have left an indelible direct and indirect imprint on current health among the oldest-old, while childhood conditions only show a significant indirect effect through adulthood socio-economic status among the young-old. It's also found that the total effect of childhood conditions on current health is more prominent among the oldest-old than those among

the young-old, consistent with the cumulative disadvantage theoretical framework. Discussions. Our findings suggest an important role of childhood conditions in shaping health profiles at advanced ages. Public policies that target the child welfare may have persistent effects on health improvement over the entire life cycle.

### **250. The reunification decision among Congolese and Senegalese couples separated because of migration to Europe**

*Cris Beauchemin, Institut National d'Études Démographiques (INED); Jocelyn Nappa Usatu, Université Catholique de Louvain; Bruno Schoumaker, Université Catholique de Louvain; Pau Baizan, Universitat Pompeu Fabra and ICREA; Amparo Gonzalez-Ferrer, Centro de Ciencias Humanas y Sociales*

Our understanding of the main drivers of the process of families' separation and reunification due to international migration remains quite limited. In spite of the numerical importance of annual entries on family grounds to developed countries, as well as the frequent legal reforms affecting the migrants' right to reunify, adequate data to empirically examine this issue are still scarce. The few quantitative analyses available so far utilize data on migrants collected only in the receiving countries. By omitting migrants who returned home to reunify with their relatives there, the results of these studies are likely to be seriously biased. The main goal of this paper is to analyse the process of couples' reunification among Congolese and Senegalese migrants in Europe, taking advantage of the international structure of the MAFE dataset. The comparative approach allow us to better understand when and why some migrants decide to reunify with their partners in Europe, while others remain separated until they return to their countries of origin.

### **250. Transnational marriages and reunification: Ghanaian couples between Ghana and Europe**

*Kim Caarls, Maastricht University; Valentina Mazzucato, Maastricht University*

Possibilities for migrant couples to migrate together or to reunify in destination countries are increasingly limited as family reunification and migration laws are becoming more stringent. Consequently, there is an increase in transnational couples, whereby one of the spouses is living in a different country. Yet, little is known about the dynamics of transnational marriages and to what extent couples reunify. Additionally, it is commonly assumed that reunification takes place at destination, disregarding cases where reunification takes place at origin. This paper addresses these gaps by focusing on Ghanaian couples with migration experience using a multi-sited research design. Different trajectories of couples' marital and migration histories are analysed using sequential analysis. We examine whether variation in trajectories is associated with migration-related variables, such as destination or period of migration, focusing on couples that have experienced 'living-apart-together'. Secondly, we distinguish between reunification at destination and at origin and examine which factors influence reunification in these two settings. We use discrete-time event-history analyses, applying a comparative risks approach. Data from the MAFE-Ghana project on Ghanaian migrants is used (N=741).

### **250. Transnational marriages in a network age**

*Meera Balarajan, Independent Consultant*

One key contemporary population flow is the migration of Indian software professionals. In the early 2000s, First World market demands resulted in some governments fast-tracking migration of highly-skilled software engineers, but the global economy has seen the return of these migrants. This paper examines the impact of transnational migration on relationships and marriages, focusing on the engineers of the network age. The work adopts a transnational approach using multi-sited ethnography carried out in India and the United Kingdom, to follow the migratory experiences of transnational couples, as well as their families left behind. A central theme of this

paper relates to hierarchical notions of power and how migration challenges traditional local structures (gender, age, caste, ethnic identity and wealth), and how national and global structures such as nation-states and multinational corporations influence marriageability, family structures and relationships. The paper finds that migration differentially affected the ‘marriage market’ of male and female software engineers. Migration has brought about re-negotiation of traditional values and expectations within transnational marriages, and is challenging the nature of intragenerational relations, and kith and kin networks

### **250. Vietnamese Brides in Taiwan: Who Are They?**

*Quang Lam Tran, Management Sciences for Health, Vietnam; Thi Mai Nguyen, General Office for Population and Family Planning; Diem Hong Tran, Hanoi National Economics University (PhD candidate)*

Since 2001, Vietnamese brides account for almost half of the foreign brides in Taiwan. In 2006, Vietnamese brides accounted for 85 percent of total 11,973 persons becoming Taiwanese citizens with an additional 1,000 new brides each year. This study provides an overview of characteristics of Vietnamese brides as well as factors affecting their decision to marry with Taiwanese. The study is conducted in Mekong River Delta – the main source of Vietnamese brides to Taiwan. Research findings reveal a big gap in age between brides and blooms i.e. 13 year, relative low educations and lower economic conditions. The marriages are in many cases arranged by marriage agencies with average time to official marriage ceremony is only 3.5 days. Marriage decision is decided by the brides themselves (40%), parents (34%) and jointly (24%). Economic reason plays an important role in making marriage decision in the forms of willingness to help families or the brides themselves want to have opportunity to change their lives, to stay in a foreign country, etc. Public attitude towards this marriage phenomenon also change over time from against the marriage to understanding and then somewhat agree with the Vietnamese brides.

### **251. Improving knowledge, talent and competitiveness: which best practice for the brain drain?**

*Roberta Pace, University of Bari; Maria Carella, University of Bari; Alessandro Albano, EUROSTAT*

This paper is divided into three parts aiming to understand what should be the most useful contents of policies for contemporary highly skilled migrations. So, we will firstly provide a short overview of the methods proposed by several Authors in order to describe the main characteristics and trends of international brain drain. Then, in the second part we will show an overview of strategies adopted so far by the governments of those countries that, according to the demographic and economic literature, are the most involved in the brain drain phenomenon. As this kind of analysis does not allow to capture some problematic aspects of the actual world economic system, the discussion will be enriched by the analysis on how changing demographic, economic and social scenarios within the different countries may affect causes and dynamics of highly skilled migration. The most recent data published by the United Nations within the World Population Prospects and data from the analysis of the World Economic Forum (2011 and 2012) will be used as main sources.

### **251. The commercialization of international migration**

*Ninna Nyberg Sørensen, Danish Institute for International Studies*

International migration has become commercialized in both control and facilitation functions. This significantly shapes current migration flows and should prompt governments to reassess migration policies. From the rapid growth of specialized transportation and labour migration companies, to multinational companies managing detention centres or establishing border security, to the organized criminal networks profiting from human smuggling and trafficking, we are

currently witnessing a growing commercialization of international migration. The paper addresses the questions prompted by these developments and offers new concepts and theory for their further study.

### **251. The Effects of Migration Policies on International Migration Flows An empirical assessment**

*Mathias Czaika, International Migration Institute -University of Oxford; Hein De Haas, International Migration Institute University of Oxford*

The effectiveness of migration policies has been widely contested in the face of their supposed failure to steer immigration and their hypothesized unintended, counter-productive effects. However, due to fundamental methodological and conceptual limitations, evidence has remained inconclusive. While the migration policy research is often descriptive and receiving-country biased, migration determinants research tends to be based on obsolete, theoretically void push-pull and gravity models which tend to omit crucial non-economic, sending-country and policy factors. More fundamentally, this poor state-of-the-art reveals a still limited understanding of the forces driving migration. This paper aims to fill part of this gap through a quantitative assessment of the short and long-term effects of immigration and emigration policy measures on the volume of total and bilateral migration flows between 1950 and 2010 when controlling for the effects of other relevant sending and receiving country determinants of international migration. The paper is part of the ERC funded DEMIG (Determinants of International Migrations Project) and draws upon new, unique data sets generated by the project: DEMIG C2C (bilateral flows – 1950-2010); DEMIG TOTAL (gross flow); DEMIG MIGPOL (migration policy); DEMIG VISA (global visa database).

### **251. The immigration debate in France and Netherlands, 2010-2102: scope and limits of the demographic approach**

*François Héran, Institut National d'Études Démographiques (INED)*

The immigration debate in France and Netherlands, 2010-2102: scope and limits of the demographic approach Demographers usually pretend to oppose facts to myths, science to illusion, when facing the public debates around sensitive issues such as immigration. The “fact-checking” attitude recently adopted by the media seems to comfort this classical opposition. However, the capacity of scientists to elaborate neutral and undisputed facts meets more and more scepticism. Demographers seem to enjoy no privilege at all to proclaim any scientific truth over “integration criteria”, “ethnic statistics”, “European values” challenged by Islam, not to mention the very definition of “migrants” or “migration background”.

In order to address more concretely this kind of issues, a systematic comparison will be made here of the immigration debates held in France and in the Netherlands in the years 2010-2012, with a special stress on the role played by social scientists. Three topics will be selected: the definition of “immigrés” and “allochtoon”, the “halal” or “ritual slaughter” controversy and the transmission of national “norms and values” to non-European migrants.

### **252. Health Care Financing in African: What does NHA Estimates Do Reveal about the Distribution of Financial Burden?**

*Akanni Olayinka Lawanson, University of Ibadan*

This paper, utilizing National Health Accounts framework attempts a profile of the health financing situation Sub-Saharan Africa countries. While Africa accounts for less than 0.9 percent of global health spending, the region carries over 43% of global burden of communicable diseases. The households bear the highest burden of healthcare financing, accounting for between 72% and 99% of private sources. The public and external sources account for around 33% and 30% of total health expenditure, respectively. With high poverty incidence in the continent, households are

easily exposed to catastrophic spending risk. This calls for health financing reforms that emphasize pooling mechanism, especially social health insurance. Deviance to the Alma Alta Declaration, which laid precedence on preventive healthcare, curative healthcare generally, dominates in the allocation of healthcare funds. This has implication on the efficiency and effectiveness of healthcare delivery in African countries. Public facilities play a dominant role in provision of healthcare, which is arguably supported by the need to achieve greater equity in healthcare delivery. However, with the growing wave of public-private-partnership initiatives, it may be intuitively wise and efficient to increase private participation in the provision of healthcare.

## **252. New Estimates of Global Development Assistance to Child Health Since 1995**

*Chunling Lu, Harvard Medical School; Annie Chu, World Health Organization-Western Pacific Regional Office; Kenneth H. Hill, Harvard University*

In the past decade, accelerated, yet insufficient progress in child mortality reduction to reach MDG 4 and a rapid increase in development assistance for health (DAH) to resource-poor settings for financing child health-related activities have been observed. Given the increase in DAH to child medical care from 1.67 billion in 2003 to 4.44 billion in 2010 (in constant 2010 US\$), tracking of donor funding to child health is crucial for assessing aid effectiveness in improving child health. This study provides new time-series cross-country estimates for global development assistance to child health with a new definition based on a demographic model of determinants of child survival over an extended time series from 1995 to 2010. Data comes from several sources, including the OECD's Creditor Reporting System. Unlike previous studies, we estimate aid from non-medical sectors, such as sanitation, food, and nutrition, which directly influence child health. Our study uses a multi-disciplinary approach to estimate DAH and improves the estimates in terms of their comparability and completeness. We conduct a descriptive study on the portion of assistance allocated to countries with the highest child mortality rates and expect to see an increase of DAH to child health both at the global level and in countries with high mortality rates.

## **252. Poids des Dépenses de Santé sur le Revenu des Ménages au Cameroun**

*Joseph Parfait Owoundi, Ministry of Economy, Planning And Regional Development, Yaounde*

Les dirigeants africains qui se sont engagés lors de la conférence d'Abuja en 2001, à allouer au moins 15% de leurs budgets nationaux au secteur de la santé pour la réalisation des OMDs, semblent avoir du mal à respecter cet engagement du fait des faiblesses et des fragmentations de leurs systèmes de santé. Ces engagements ont été renouvelés à Gaborone au Botswana en 2005 puis à Ouagadougou au Burkina Faso en 2006. En effet, le financement des bailleurs représente encore aujourd'hui une grande part des dépenses en santé publique du continent. Dans certains pays, 50% ou plus de leurs budgets viennent de l'aide étrangère ou privée. Dans près de la moitié des pays, le financement privé de la santé est égale ou dépasse très largement le financement public, allant jusqu'à 70% dans certains États comme le Soudan, la Côte d'Ivoire, le Cameroun, le Tchad, le Libéria ou l'Ouganda. Seuls cinq pays (Rwanda, Malawi, Zambie, Burkina Faso, Togo) ont pour le moment respecté la promesse faite à la conférence d'Abuja. Au Cameroun, la propension moyenne de la consommation médicale totale des ménages est très élevée, où 51% de la population vit avec moins de deux dollars par jour. En effet, 16% des ménages dépensent plus de la moitié du revenu à la santé et 52% dépensent plus de la totalité. Ce qui constitue un poids de 68% en dépenses de santé.

## **253. 2011 Census data on language : Different questionnaires, different results**

*René Houle, Statistics Canada; Jean-Pierre Corbeil, Statistics Canada*

The historical comparability of data from different censuses requires that we take into account all changes that may have arisen during the period under study. The way in which we answer the census of population questionnaire or to any other surveys may in fact be influenced by various

factors, including those related to the methodology. The examination of the responses to the language questions of the 2001, 2006 and 2011 censuses allows us to note that observed changes in the patterns of response to the questions on mother tongue and language spoken at home in 2011 arise in large part from the changes made to the position and context of the language questions in this census questionnaire relative to previous censuses.

### **253. Ethnic classification in the national census, 1985-2012: Evidence from the Ethnicity Counts? project**

*Tahu Hera Kukutai, National Institute of Demographic and Economic Analysis; Victor Thompson, Rider University*

A basic but fundamental question to arise from the dramatic changes in immigration flows is whether countries have moved towards greater recognition of ethnic diversity in the official statistical sources that provide the basis for evidence-based policy. Numerous case studies have examined how and why governments in particular times and places count their populations by ethnicity but studies that are both cross-national and longitudinal are rare. In this paper we present preliminary findings from the Ethnicity Counts? database of ethnicity questions drawn from national censuses and population registers of more than 200 countries spanning 1985 to 2014. We find a clear shift towards the recognition of ethnic difference in national censuses, although this has occurred unevenly across time and place. In any given round, questions on language dominate, followed by ethnicity, mother tongue and ethnic nationality. The language of race remains, for the most part, confined to the former slaveholding societies in the Americas including the Caribbean and some of US territories in Oceania. Interestingly, the shift towards ethnic enumeration has been accompanied by an increase in state inquiries into citizenship and parental birthplace, suggesting that ethnic and civic enumeration operate as dual strategies of state surveillance.

### **253. Question of Ethnic Group Formulation in the Chinese Census**

*Yun Zhou, Peking University*

Unlike countries with a long history of census taking (e.g. the United States and most European countries), China had only six censuses and the latest one was finished in year 2010. In the censuses, China always collects ethnic group information by one question, “Ethnicity (民族)”, and the answer is in a blank space ending with “ethnic group (族)”. However, the meaning of the question was quite different in year 2010 from the one taken in 1953, the first census in China. That is because since 1982, Chinese answered the census ethnicity question within a framework of 56 ethnic groups. This change in meaning or content of the question is closely related to the purpose of ethnic data collection in the census, the characteristics of ethnic groups in Chinese society as well as a concern of an equal chance for development of all Chinese in China. This paper starts with the ethnicity question in the latest census, the answers and the meanings of the question to individuals. We will examine the short history and reasons for the change and the special meaning of the question over the years. The analysis will remind the academic community and public the complexity of the ethnicity issues of the census in China, including formulation and interpretation of the question as well as their results.

### **254. A new population policy challenge towards the cross border birth issue in Hong Kong**

*Nancy Ling Sze Leung, Ritsumeikan University*

Following the handover, Hong Kong started to have birthright citizenship to Chinese citizens which induced mainland Chinese citizen couples to cross the border to give birth in Hong Kong. From 2003, the young population in Hong Kong was much smaller than the total number of births. This was not because infant mortality increased sharply; it was because most of the children born by mainland Chinese citizen couples were not settling in Hong Kong after their birth. The gap between the number of births and actual young population directly affected the population and

economic development in the future. Since Hong Kong had a very low total fertility rate more young population was needed to maintain the active of the society. Although there were a large number of mainland Chinese citizen couples born children who had granted the right of abode in Hong Kong, they did not help the economic development if they did not reside in Hong Kong. Thus, there was a necessary to rethink the population policy of Hong Kong and this paper aimed to discuss the population policy in Hong Kong towards the issue of mainland Chinese citizen couples' cross border birth.

#### **254. Future development challenges in Mongolia: Multi-state population projections by age, sex, and education**

*Thomas Spoorenberg, United Nations Population Division; Munkhbadar Jugder, National Statistical Office of Mongolia*

In this paper, the future development challenges in Mongolia are investigated through the application of multistate population projections by age, sex, and education. The present situation of the country is interesting on many aspects and its population development contrasts with what is observed elsewhere in East Asia. As the result of a very swift fertility decline in the early 1990s, the country is opening its demographic window of opportunity. Further, Mongolia became nowadays the fastest growing economy in Asia thanks to the recent exploitation of its mining resources. Yet, these favorable factors may be hindered by a series of challenges. On the demographic side, the fertility has increased by about 0.6-0.7 children since its nadir in 2005 to 2.61 children per woman in 2011. By introducing sudden shocks in the age structural transition, this fertility increase bears a series of challenges for the planning of the national development. Whether Mongolia can set the most appropriate conditions to benefit from its current economic boom remains an open question. Based on different assumptions on the future course of fertility and education in the country, the implications and challenges for development of the future population composition of Mongolia are discussed.

#### **254. Is South Korea Ready for Multicultural Families (“다문화”)? An Analysis of Social Media**

*Yaeseul Park, Georgetown University; Elizabeth Hervey Stephen, Georgetown University*

The Republic of Korea is known as a homogenous country; a recent trend, however, is an increase in young women from other Asian countries who marry Korean men, which challenges the normative familial structure of Korean families and communities. Our analysis uses social media to examine the narrative of Koreans as they discuss what will be required of Korea to accept multicultural families and children. Three Korean web portals—Daum, Nate and Naver—were surveyed over the summer of 2012 for articles and comments on multicultural families. While we acknowledge that posters are not a representative sample of all Koreans, the web portals offer a slice of information about the public debate surrounding multicultural families. Korean web portals are a form of social communication that is not replicated in countries such as the United States; the web portals offer a timely assessment of public opinion that would be missed in nationally representative surveys. Preliminary findings show that the number of postings and concern about multi-cultural families has increased and that the public discourse on the internet is meaningful in the development of a community of “netizens” as a reflection of contemporary Korean society. The full paper discusses these findings in detail.

#### **254. Risk Factors and Policy Challenges of Population Development in China**

*Benbo Zhang, National development And Reform Commission, China; Qiang Ren, Peking University*

This report is aimed at analyzing the policy challenges based on a questionnaire survey for experts to identify the risk factors of population development in China. Population prediction shows that

China will maintain a relatively low fertility level in the future, while the population size would increase steadily in the coming 20 years, accompanying with a continuous and rapid aging. Fifty experts from different research fields are surveyed to discriminate the risk factors related to population development. It's accepted by most of the experts that population size is no longer the prominent constraint on China's economic and social development. Instead, structural problems are becoming more and more obvious. The most worrying concerns are the accelerating population aging, the worsening employment market, the unbalanced sex ratio at birth, the floating population in the process of rapid urbanization. Policy challenges to population development are discussed, and related policy options are provided with focus on establishing comprehensive decision-making mechanism and promoting sustainable development.

### **255. Challenges and Opportunities in Incorporating Demographic Analyses of Displacement into Transitional Justice Processes**

*Romesh Silva, University of California, Berkeley; Daniel Guzman, University of Michigan; Tamy Guberek, Independent Scholar*

Armed conflict situations often involve mass displacement of civilians. This paper reviews the measurement challenges involved in incorporating quantitative analyses of conflict-related displacement phenomena when characterizing the nature, magnitude and pattern of large-scale human rights violations. We present two recent case studies, from Timor-Leste and Kosovo, where quantitative analysis of conflict-related displacement was integrated into a truth commission's work and statistical evidence was used by an international criminal tribunal, respectively. In these case studies we examine how the integration of analysis of civilian displacement phenomena strengthened our understanding of "what happened" during these two conflict. Using these two case studies, we also contextualize how conflict-related displacement and other forms of violence were employed in these particular conflict situations. We then conclude by noting useful lessons-learned from these case-studies: (i) in terms of the use of diverse data sources (that draw from both traditional demographic and non-traditional sources) and adaptation of classical demographic methods, and (ii) discussing the challenges of presenting demographic estimates and analysis on conflict-related displacement in international justice settings.

### **255. Child Trafficking in Post-Conflict Situations: Evidence and Lessons Learnt from Displaced Camps in Jammu and Kashmir, India**

*Falendra Kumar Sudan, University of Jammu*

Trafficking has become a matter of serious concern in post-conflict situations. Children in displaced camps have been exposed to unprecedented vulnerabilities due to trafficking and are often lured by promise of better employment and a more prosperous life far from their homes. The study intends to provide an overview of child trafficking situation and in particular to focus attention on internal trafficking of conflict induced displaced children in Jammu and Kashmir, India. It provides a qualitative picture of child trafficking situation and document the trafficking experience from the perspective of its victims and affected communities living in displaced settings. Unless a public opinion is built, the laws are effectively designed and implemented, the situation is constantly monitored and the nexus of traffickers is exposed, children will continue to be trafficked. Therefore, coordinated efforts are required to stop and prevent child trafficking. There is need for a strategy to prevent emergence of child trafficking in post-conflict situations. It is hoped that the study will help government and non-government agencies, policy makers and local communities to better understand the impact and effects of trafficking on children and assist in developing policy and programmes to prevent and protect children from abuse and exploita

### **255. Reproductive Health and Gender-Based Violence among Displaced Syrian Women in Lebanon**

*Jinan AR Usta, American University of Beirut*

The research aims at studying the relation between forced migration and reproductive health (RH) outcomes. Focus group discussions and cross sectional survey of Syrian refugee women residing in Lebanon were done. The information collected related to their current reproductive status, their reproductive history during the conflict, their needs for services, their experiences with sexual and gender based violence, and their help seeking behaviors. Of the 452 women surveyed, 74 were pregnant during the conflict, several of them more than once, preterm delivery was high. The most common pregnancy related problem was anemia, abdominal pains and bleeding. As for RH diseases menstrual irregularities, dysmenorrhea and vaginal discharges were common. Prioritizing other members' wellbeing was a major reason for not seeking medical help. Moreover, 31% of women had personal experience of violence (physical, sexual or psychological) and are currently experiencing IPV but half of them elected not to talk about abuse.

### **255. Trafficking of women and vulnerability to HIV infection in urban Mexico**

*Arun Kumar Acharya, Universidad Autónoma de Nuevo León; Jennifer Bryson Clark, South Texas College, USA*

Trafficking of women for sexual exploitation is a prevalent problem that may adversely affect many aspects of women's health. In this paper, we examine how sexual exploitation is exposing trafficked women to HIV infection and sexually transmitted diseases in urban Mexico. This study was conducted in Mexico City and Monterrey, where one hundred and ten trafficked women were interviewed during the year 2003-2006 and 2007-2011. Results indicate that trafficked women are physically and sexually abused and engage in high-risk sexual behavior leading to infection with different kinds of sexually transmitted diseases. This abuse, high-risk behavior coupled with high numbers of clients serviced daily, indicates these trafficked women are at a higher risk of HIV infection.

### **256. Le métier de démographe: réflexion sur la formation et la recherche en démographie**

*Armelle Andro, Université Paris 1 Panthéon Sorbonne; Delphine Arnoux, ined; Dominique C. Diguët, Institut National d'Études Démographiques (INED); Géraldine Duthé, Institut National d'Études Démographiques (INED); Lama Kabbanji, Institut de Recherche pour le Développement (IRD); Marie Lesclingand, Université de Nice Sophia-Antipolis; Myriam de Loenzien, CEPED-IRD; Catherine E. Sluse, Institut National d'Études Démographiques (INED)*

Cette recherche s'inscrit dans une réflexion sur les contours actuels de la formation et de la recherche en démographie en France et son évolution qui a été initiée en 2012 par les membres du bureau du Comité national français (CNF) de l'Union internationale pour l'étude scientifique de la population (UIESP). Dans cette communication, une réflexion générale s'articulant autour des questions suivantes est d'abord proposée: Comment la démographie se caractérise-t-elle aujourd'hui en terme de formation ? Existe-t-il des différences selon les contextes géographiques, et en quoi consistent-elles ? Quelles sont les thématiques, les approches, les méthodes dominantes et varient-elles selon le contexte ? Quels sont les principaux questionnements auxquels est soumise cette discipline? Puis cette communication va particulièrement porter sur le cas de la France. Une base de données des thèses en démographie soutenues en France durant les dix dernières années a été constituée et est analysée. Ces analyses permettront de discuter de la place de la démographie en tant que discipline dans les études de population en France dans une perspective temporelle, et de mettre en lumière les tendances qui se dégagent en termes de lieux de formation, de problématiques traitées et de méthodologies mobilisées.

## **256. Digital ideas in instruction**

*James Carey, University of California*

Spiraling costs of education, agrarian timetables, old pedagogies and long-form lectures are giving way to new ways of delivering content, assessing learning, fostering interaction, and engaging students with courses ranging from hybrid, blended and fully online to MOOCS. This presentation provides a brief overview of new concepts and methods for the use of digital and online tools in instruction and outreach. A video version of this presentation can be viewed at <https://www.youtube.com/watch?v=HKExcm4u0lg>

## **257. Urban Migration of Adolescent Girls: Quantitative Results from Developing Countries**

*Mark R Montgomery, Population Council; Deborah Balk, Baruch College, City University of New York (CUNY); Susana Beatriz Adamo, CIESIN, Columbia University*

The paper draws upon quantitative evidence to develop a portrait of developing-country adolescent girls and young women who migrate to cities and towns. The evidence comes in the form of a large number of well-standardized censuses and demographic surveys, supplemented with studies of individual countries and regions. Many types of evidence are needed to illuminate girls' lives, but knowledge of the size of migration flows and their demographic composition is essential to understanding the scale of program resources required to reach girls in need, and to get a sense of where within a country those resources should be directed.

## **257. Mothering as migrants: Experiences from the informal settlements of Nairobi, Kenya**

*Cassandra Cotton, McGill University; Donatien Beguy, African Population and Health Research Center (APHRC)*

Research emphasizing effects of migration on sub-Saharan African families has focused on implications of absent fathers, particularly in areas with historic male migration. Yet, the number of women migrating throughout Africa is likely to have more profound effects on family stability and child well-being. When women move, they face difficult decisions of migrating with children, potentially exposing them to risky environments, or leaving them with others. Little is known about how women make these choices or of implications for children's well-being whether they co-migrate or are 'mothered from a distance.' This research will shed light on decision-making processes of migrant mothers, and the implications of mother's migration on children's residence using in-depth interviews with migrants in Nairobi's informal settlements. As African women continue to migrate to cities, this research points to important implications with regard to how women manage family life when migrating to impoverished urban communities.

## **257. International migrations of Congolese and Senegalese women: new forms of autonomous mobility or persistence of family migration patterns?**

*Sophie Vause, Université Catholique de Louvain; Sorana Toma, University Of Oxford*

Prior research, mostly focused on Asian and Latin American contexts, found that women are increasingly present in international migration flows, especially so as independent economic actors. This paper examines the extent to which these two trends - the feminization of migration flows and an increase in autonomous female migration - can be observed in the African context. It uses data collected within the Migration between Africa and Europe (MAFE) project in Senegal, DR Congo and several European countries. Discrete-time event-history analysis reveals only moderate increases in the likelihood of female migration over time, but no decline in gender gaps. The collection of rich retrospective information from both current and return migrants allows a more in-depth investigation of the nature of women's moves. Several indicators are used to grasp the extent to which women moved autonomously or in association to their partner. While some evidence of a rise in autonomous female migration was found among the Congolese, no salient change was visible in Senegal. This was interpreted in light of the more rigid patriarchal system

prevailing in Senegal. The paper also shows that different indicators do not all point in the same direction suggesting that the borders between autonomous and associational moves are often blurred.

### **257. Expérience de la migration des femmes du Paraguay en Espagne**

*María Alejandra Fantin, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)*

Alors que la présence des femmes est indéniable dans les migrations à travers l'histoire, dans les dernières décennies le phénomène a pris des dimensions et des caractéristiques qui ont motivé la recherche d'un corps théorique pour expliquer l'impact de la migration féminine dans les pays d'origine et de destination et les transformations sociales qui ont eu lieu (Tapia Ladino, 2011). Le nombre croissant de travailleurs étrangers, principalement d'Amérique latine est l'un des traits les plus caractéristiques de l'immigration. Le stock de Paraguayens enregistrée dans le Recensement de Population et d'Habitat 2001 en Espagne, a enregistré qu'environ six personnes sur dix migrants paraguayens sont des femmes. Dans ce cadre, le présent document cherche à étudier l'expérience migratoire, les motivations, les conditions de travail et de la famille dans le lieu d'origine et de destination, les attentes passées et à venir, les perceptions, etc. des femmes paraguayennes en Espagne Cet article utilise des données provenant des entretiens avec des immigrants du Paraguay résidents à Madrid pendant les mois d'Octobre et Novembre 2010, ainsi que des entretiens avec des fonctionnaires y compris le Consulat du Paraguay à Madrid directement liée à la protection sociale en cette légation.

### **258. Early, Shorter and Fewer? Convergence of reproductive biographies and pathways to accelerated childbearing among Indian women**

*Frans Willekens, Netherlands Interdisciplinary Demographic Institute (NIDI); Sabu Padmadas, University of Southampton*

Reproductive trajectories in India demonstrate an exceptional pattern not seen elsewhere in other low and middle income countries. Births are increasingly compressed in shorter intervals and many Indian women complete childbearing at very young ages. This is particularly the case in Andhra Pradesh where an intensive sterilization-driven family planning program brought down fertility rate way below replacement level in a relatively short period. The Andhra model, although successful in reducing fertility rates, is certainly extreme in India. The critical question is: to what extent other large, high fertility states follow the Andhra model? Using birth history data from three successive rounds of the National Family Health Surveys, this paper uses multi-state analysis to investigate the age-period-cohort variations determining the sequencing and timing of reproductive events in Indian states. The accelerated childbearing pattern depicted in Andhra is rapidly converging in other medium/high fertility states even among young educated cohorts of women.

### **258. Gendered Spaces of Reproduction**

*An-Magritt Jensen, Norwegian University of Science And Technology (ntnu)*

While most European countries have experienced very low fertility for a long period, the TFR in Norway has increased since the mid-1980s and is now among the highest in Europe. Paradoxically, during the same period childlessness among men has also grown. More men live without children and the "child environment" is increasingly gendered. This paper concentrates on young people's "child environment" through a gender perspective. The paper analyses semi-structured interviews of 90 Norwegian women and men in their prime reproductive ages (25-40 years), with and without children, from upper middle and working classes during 2010. The network analysis focuses on the role of friends in particular, emphasising the concepts of social influence and social learning (Mische, 2011; Rossier and Bernardi, 2009). The analysis suggests that few men discuss childbearing with in their friendship networks. To childless men with

partners her networks seem to have an important social influence also on men's childbearing. While discussions among men are few, social learning is transmitted through observing changes in the life of male friends with children.

**258. When the timing of childbearing condemns women, are reproductive technologies a new way towards gender equality?**

*Virginie Rozée, Institut National d'Études Démographiques (INED)*

There are evident gender inequalities regarding procreation and parental projects: reproductive age differs between women and men both biologically and socially. At the same time, social and demographic changes lead women to postpone their maternity or to choose between their career and maternity. Today, women can conceive later with assisted reproductive technologies (ART), oocyte donation in particular. But are these technologies a solution to reduce gender inequality regarding parenting and procreation? Are they used in this way? Through an empirical study on cross-border fertility care involving French residents, which allowed to recruit French women over 40 (whose ART access is generally refused in France), we will present the characteristics, histories and motivations of these women in order to analyze if "late" maternity is for them the result of a personal and free choice. We will show that ART, especially oocyte donation, is not experienced as a liberating and chosen event. Nevertheless, the international procreative market is proposing a new medical technique (oocyte vitrification) which could be a real springboard towards gender equality regarding calendar of procreation.

**258. Women's household income contributions and higher-order births in the United States**

*Alison Gemmill, University of California, Berkeley; Margarita Chudnovskaya, Stockholm University; Peter Scholfield Hepburn, University of California, Berkeley*

Since the 1970s, married women have been increasingly participating in the labor force and providing a greater share of household incomes. Little is known about how women's rising income contributions might influence couples' fertility behavior. This study explores the relationship between husbands' and wives' share of household income and fertility trajectories among married couples in the U.S. using data from the National Longitudinal Survey of Youth. The authors demonstrate that completed fertility follows a U-shaped pattern in which households with low or high proportions of wife-generated total income have roughly similar numbers of children, while those with more equitable income splits have relatively fewer, even after controlling for total household income, race, and age at first birth. The authors also employ event history models to investigate differences in the propensity of having a second or third child and time spent in each parity.

**259. Community Influences on Contraceptive Use in Mozambique**

*Boaventura Manuel Cau, Universidade Eduardo Mondlane*

Fertility in sub-Saharan Africa remains the highest in world and the decline in birth rates in the region has slowed further over the past decade. Yet, the average contraceptive prevalence in Africa is the lowest in major world regions and there has been limited investigation of contextual influences on contraceptive use in the region. Using data from the 2003 Mozambique Demographic and Health Survey, we estimate random intercept logistic regression models to examine the mechanisms through which community context influences women's use of a modern method of contraception in Mozambique. We find that community context influences the use of modern methods of contraception by shaping the social and opportunity environment in which women live. In particular, we find that residing in a community with higher levels of female education, higher average age at first sexual intercourse, higher percentage of women who were told about family planning at health facility has a significant effect on a woman's use of a modern method of contraception. We also find that living in a community where polygyny is common and

where there is higher proportion of women who have not a final say on own visit to family or relatives has a significant negative effect.

### **259. Contraceptive use dynamics in South Asia: Has there been Enough Choice?**

*Praween Kumar Agrawal, Population Council*

Paper examines the contraceptive use dynamics and investigates whether there has been enough informed choice for contraceptives in South Asia using data from 3 rounds of recent DHS in four countries-Bangladesh, India Nepal and Pakistan. DHS asked the current users whether they were informed about the possible side effects, what to do if they experienced side effects, told about other methods they could use and told that sterilization is permanent. Informed choice is analyzed by selected socio-economic characteristics of users through descriptive statistics and multivariate methods.

Nepal, Bangladesh and India have made about 10% point progress (36% in early 1990s to 44%-48% in 2005-07). There is one or another dominant method of family planning in most of the countries in the region. Only 25% users in India, 38% in Pakistan and almost half in Nepal were ever informed by a health worker about other methods they could use. Also very few were informed about the side effects. Informed choice significantly differs by socio-economic characteristics of users and was low among poor and public facilities users. Finding of study that basket of contraceptive choice is limited and informed choice is significantly low, calls urgent attention from program managers and policy makers.

### **259. Determinants of contraceptive choices in Malawi**

*Martin Enock Palamuleni, North West University*

This paper uses data from the 2000 and 2004 Demographic and Health Surveys to examine the factors explaining the contraceptive method choice in Malawi. Multinomial logistic regressions were used to study the determinants of the contraceptive method-choice. The results show that the major determinants of contraceptive use are age, respondents' and partners' approval of family planning, family planning discussion with partner, number of living children, work status, education and visit to a health centre. As a policy measure, information, education and communication programmes on family planning should be intensified, particularly in rural areas and targeting men.

Key words: Malawi, Contraceptive use, logistic regression, socio-economic, Demographic and health survey

### **259. Patterns and Determinants of Contraceptive Use in Southern Africa in the context of higher HIV/AIDS prevalence.**

*P. Sadasivan Nair, University of Botswana; Kannan Navaneetham, University of Botswana*

It is well known that the contraceptive prevalence in sub-Saharan Africa is low. Consequently, the unmet need for contraception is also likely to be quite high in these countries. Sub-Saharan countries differ significantly in educational level, economic status and population policy formulations. How do the patterns of contraceptive use vary by male and female in the context of higher HIV/AIDS? How did the patterns of contraceptive use change over time? The objectives of this paper are; (a) to study the patterns of contraceptive use in southern Africa in the context of higher HIV/AIDS prevalence, (b) to find out the determinants of contraceptive use in southern Africa and (c) to correlate contraceptive prevalence and unmet need with the achievement of Millennium Development Goal 5, i.e. improving maternal health. Data and Methods Five countries viz. DRC, South Africa, Botswana, Mozambique and Zambia are selected for the study. The data from different rounds of DHS will be used for the analysis. Analysis will be carried out by pooling data from different rounds of DHS. Analysis will be carried out using bi-variate and multi-variate statistical techniques. Multilevel multinomial model will be applied to find out the e

## **260. Growing Indian cities and towns throughout the 20th century**

*Joël Querci, Aix-Marseille Université; Sébastien Oliveau, Aix-Marseille University*

There were 35 million plus cities in India, in 2001, and 46 in 2011. Since a few decades, we are attending a relative take-off of the Indian urbanization rate (16.5% in 1951 and 32.1% in 2011). Indeed, the Indian urban population, in 2011, is more numerous than the population of the USA in 2012. Assessing the causes and consequences of that growing number and size of cities appears essential for the understanding of the future Indian urban society. A first step consists in assessing the evolution of the number of towns and cities before studying the evolution of the population of each town since 1901 and analyzing the evolution of the Indian urban system using a Zipf's rank-size rule.

Outcomes showed that, since the 1950s, the number of towns is notably increasing. More specifically, the number of second and third order cities grown tremendously since the last 40 years. Moreover, the assessment of the evolution of the Indian urban system led us to highlight a situation nationally balanced (no primacy) and regionally unbalanced (with presence of primate cities). We can then emphasize the multiscalar structure of the Indian urban system and assume the existence of a spatial resilience phenomenon.

Keywords: India, urban system, urban population, spatial resilience

## **260. Spatial dependence of the level of urbanization and its economic mechanism- A spatial analysis in demography**

*Weijun Wang, Department of Sociology, Peking University; Jiehua Lu, Department of Sociology, Peking University*

Through exploratory spatial analysis, this paper finds strong spatial dependence in levels of urbanization among 287 prefecture-level cities in China, the high-high and low-low are the main spatial aggregation types among the neighbor cities. The level of urbanization of one city is highly dependent on its neighbor cities. The major economic factors also show obvious spatial dependence, which may contribute to the spatial aggregation of the urbanization level. Spatial error regression model verifies and controls this kind of spatial dependence, and indicates that one percentage point increase of degree of openness can relatively more significantly increase the urbanization level than the degree of industrialization due to Chinese registration system, industrialization strategy as well as process, though both of them may play an important role in the spatial dependence of level of urbanization in China.

## **260. The Urban Systems of China and the United States**

*Dudley L. Poston, Texas A&M University; Qian Xiong, Texas A&M University*

We analyze the urban hierarchies of China and the United States. We first review the emergence of Shanghai, and of New York City, as the Super Metropolises in the two countries. The histories of both Shanghai and New York City indicate that the dominance of a city is not solely based on having a large population, but more importantly on performing various key functions. Next, using concepts and theories of human ecology and demography, we analyze data from the 2011 China City Statistical Yearbook and from the 2007 Economic Census of the U.S. to configure quantitatively the urban systems of the two countries. The composite indexes of metropolitan dominance are generated for each of China's 171 large cities and for each of the 67 large cities in the United States (a large city has a population of 750K or more). We next develop a hierarchical classification of nine categories of metropolitan dominance to delineate quantitatively the hierarchies of China and United States. Further, we analyze the similarities and dissimilarities in the urban systems of the two countries. We conclude that it is the dominance of the city, rather than its population size, that determines its position in the urban hierarchy.

## **260. L'actuelle migration métropolitaine en Amérique Latine : les métropoles gagnent ou perdent population par migration interne?**

*Jorge Rodriguez, CELADE-Population Division of ECLAC; Ana Maria Chavez-Galindo, Centro Regional de Investigaciones Multidisciplinarias; José Marcos Pinto Da Cunha, Universidade Estadual de Campinas (UNICAMP); Jaime Sobrino, El Colegio De Mexico; Jorge Barquero, Centro Centroamericano de Población (CCP); Daniel Macadar, Facultad de Ciencia Sociales-Universidad de La Republica; Mario Acuña, CELADE-CEPAL*

Il y a un débat théorique et une discussion politique sur la situation migratoire actuelle dans les aires métropolitaines d'Amérique Latine. Les recensements de l'année 2000 ont permis d'identifier quelques métropoles de la région comme d'émigration nette, mais la plupart d'ellesregistrent une immigration nette. Compte tenu la disponibilité de micro-données du recensement de 2010, nous allons répondre à la question sur l'attraction migratoire de ces villes. Pourtant, on va travailler avec l'ensemble de micro-données des recensements pour construire une matrice de migration spécifique (en utilisant le lieu de résidence cinq ans avant du recensement). Ensuite, nous allons faire une estimation de l'impact des migrations internes sur la croissance de la population pour 20 villes qui ont un million ou plus de résidents dans cinq pays d'Amérique Latine, en employant les micro-données des recensements de 2000 et 2010 (Brésil, Costa Rica, Equateur, Mexique et Panama). Afin de contrôler l'effet de distorsion de la définition spatiale de l'aire métropolitaine, le calcul s'effectuera en tenant compte au moins de deux définitions géographiques. Et pour distinguer l'impact spatiale de la migration métropolitaine (immigration et émigration dans et entre elles) tous les flux migratoires vont être classés en deux groupes : proche et éloigné

## **262. Effect of Asian Dust Storms on Mortality in Korea during 2001-2009**

*Hyewon Lee, Graduate school of public health, Seoul National Univ.; Ho Kim, Seoul National University*

The adverse effects of dust storms on health have been major issue in several countries. However, the results of the studies on the association between dust storms and mortality are inconsistent. Thus, this study aims to explore the effect of Asian dust storms on daily mortality in Korea. We used Generalized additive model with Quasi-Poisson regressions. We considered the lag effect of dust and controlled for PM10, temperature, humidity, air pressure, seasons and time trends. Also, we performed additional analyses which adjusted for SO<sub>2</sub>, NO<sub>2</sub> respectively. We performed a meta-analysis of seven metropolitan cities in Korea to estimate the pooled effects. we found significant positive associations between Asian dust storms and mortality at 5 lag day (total non-accidental: 2.25%; 95% CI: 0.55, 3.97, cardiovascular: 4.79%; 95% CI: 1.63, 8.04, male: 3.22; 95% CI: 0.95, 5.53, female: 2.5%; 95% CI: 0.03, 5.04, ≥65 years: 3.82%; 95% CI: 0.44, 7.33), at 2 lag day (male: 2.34%; 95% CI: 0.09, 4.64 and <65 years: 3.06%; 95% CI: 0.3, 5.9), and at 3 lag day (respiratory: 6.33%; 95% CI: 1.12, 11.82 and male: 2.71%; 95% CI: 0.46, 5.01) in the model which adjusted for SO<sub>2</sub>. This study first shows the significant relationship between Asian dust storms and mortality in Korea. Dust warning system could delay the effect of ADS.

## **262. Malaria vulnerability in Ga Mashie, Accra: climate and socio-economic influences**

*Margaret - Appiah, University of Ghana*

Malaria, one of the major health concerns in Ghana is predicted to be impacted by climate change. This study examined the influence of rainfall and household characteristics on malaria incidence as analysed through the lenses of Intergovernmental Panel on Climate Change framework on climate change and health. We used data from two sources: (i) malaria and rainfall data from the Centre for Health and Information Management and Ghana Meteorological Agency and (ii) survey of 434 representative sample households in Ga-Mashie, Accra. The data were analysed at the macro and micro levels using descriptive statistics, bivariate and multivariate techniques. The macro level

analysis shows a significant relationship between number of rain days and incidence of malaria. It was found that flooding is positive related with incidence of malaria at the micro level. Again, community of residence and level of education were significantly related with malaria incidence at the micro level. The findings have implication for other climate sensitive diseases in Ghana and how they relate with rainfall and other climatic variables, which future studies should seek to address. Public health programmes must be intensified, focusing on all year round prevention of malaria.

Key words: Climate, Climate Variability, Flooding, Ghana

## **262. The impact of extreme weather conditions on mortality in two Chinese populations**

*Zhongwei Zhao, Australian National University*

This study examines the impacts of extreme weather conditions, such as sustained cold weather or heat waves on population health and mortality. It also examine variations in their impacts on deaths caused by major diseases and among sub-population groups.

To examine these research questions, we use detailed mortality and environmental data collected from HongKong and Taiwan. This includes about five million death records collected over last three decades from the 1970s, daily meteorological data for the same period and daily air quality data for the last 15 years.

We will use the conventional Generalised Additive Model and a method we are now developing to model and study the relationship between daily mortality and a wide range of environmental factors, especially the impact of extreme weather conditions on daily mortality changes. We also examine intra-population variations in such impacts and identify the vulnerable population.

Because our mortality and environmental data cover for a long period, we also intend to examine changes in the impact of extreme weather over time.

The study is expected to shed new lights on the environment-mortality relationship in East Asia, and its major research findings will have considerable policy implications and help to improve risk prevention among the vulnerable population.

## **262. Weather and Mortality in Sub-Saharan Africa: A Retrospective Analysis of Data from Health and Demographic Surveillance Systems**

*Martin W Bangha, INDEPTH Network; Daniel Azongo, Navrongo Health Research Center; Sigilbert Mrema, Ifahara Health Institute; Thaddaeus Egondi, APHRC; Ali Sie, CRSN; Osman Sankoh, INDEPTH Network*

Studies in industrialized countries have documented adverse effects of climate and weather variability on population health. Empirical studies from Africa are few. In response to this concern, an INDEPTH Network study was initiated in collaboration with UNESCO as a coordinated effort to assess the relation Climate Change, Migration and Mortality (CLIMIMO). The ultimate aim is improving current understanding of extreme weather effects, time trends and seasonality and thereby, populations vulnerability to climate change using longitudinal data. A dozen INDEPTH member HDSSs participated at a capacity strengthening workshop in Burkina Faso 2011 that provided the instruments for researchers to analyse longitudinal data and more recently in a data analysis workshop in Ghana 2012. This paper presents data from four African countries Burkina Faso, Ghana, Kenya and Tanzania. Weather data from global observational database, complemented by HDSS-specific meteorological data where available was used.

Analyses use time series Poisson regression models, regressing weather condition on the counts of mortality by subgroups of the population. Results show that weather variability is strongly related to mortality with children and older adults being the most sensitive to climate and weather variability-related mortality.

### **263. Universal coverage for all? Health inequalities in MCH and health systems reforms in Brazil and India**

*Tiziana Leone, London School of Economics and Political Science (LSE); Kenya Noronha, Universidade Federal de Minas Gerais; Dilip R T, Public Health Foundation of India (PHFI)*

Emerging economies are showing signs of health improvements with average levels of key health outcomes increasing but with levels of inequalities at times worsening. Using the National Family Health Surveys (1992, 1998, 2005) for India and Household Demographic Surveys (PNDS) (1992, 1996, 2006) in Brazil this paper analyses how the stages in public spending reforms in both countries have progressed at a time of health improvements and how they have might have had an impact on health inequalities focusing on maternal and child health (MCH). This has been at the forefront in low and middle income countries in widening access to health care. The aims of this paper are to chart the evolution of health reforms in both Brazil and India and to assess how inequalities in MCH have changed over this period. Without aiming to assess the impact, the following issues are addressed: Have health reforms over the last two decades improved or worsened inequality? What can be learnt from the experiences and how can we benefit from the comparison between Brazil and India? What are the key challenges in comparing two culturally and politically different countries? The paper shows how Brazil is succeeding in reducing inequalities whereas India has still a long way to go. This paper is set within a wider call for universal health coverage in LMICs.

### **263. To the fullest extent of policy: post-abortion care in Kenya.**

*Saumya Ramarao, The Population Council; Chi-Chi Undie, Population Council; Francis Obare, Population Council; Lynn M. Van Lith, JHU-CCP; Hannah Searing, EngenderHealth; Mercy Wahome, EngenderHealth*

In Kenya, health policies emphasize enhancement of community access to health care and the empowerment of communities to demand services from providers as an approach to reduce maternal morbidity and mortality. This paper describes an innovative experiment geared toward addressing a critical public health issue—postabortion care (PAC)—within Kenya’s current policy context. The paper uses data from a pre-and post-intervention, quasi-experimental study conducted in six communities in Naivasha, Kenya, from 2010 to 2012 to examine the effects of this intervention. Information was collected through a community-based survey with 593 and 647 women aged 18-49 at baseline and endline, respectively. Semi-structured interviews with providers and qualitative interviews and discussions with the wider community were also conducted. The findings indicate that the intervention was effective in: increasing women’s awareness of danger signs in early pregnancy; providers being able to effectively offer PAC services at lower-level facilities; raising awareness of PAC; women seeking and obtaining PAC services at lower-level facilities; and inspiring communities to take action for their own health. The findings highlight the fact that heightening community awareness and mobilization is essential for strengthening post-abortion care.

### **263. Right to contraception: how far achieved and what to be blamed for the unmet need in South Asia?**

*Manas Ranjan Pradhan, International Institute for Population Sciences (Iips), Mumbai; Hanimi Reddy Modugu, Public Health Foundation of India (PHFI); Hiralal Nayak, Fhi 360; Nihar Ranjan Mishra, International Institute for Population Sciences (IIPS)*

This study assesses the dynamics of met and unmet need for contraception and, its program as well as policy implications in India, Pakistan, Bangladesh and Nepal; from rights perspective. Data of currently married women aged 15-49 years from the latest round of Demographic and Health Survey (DHS) of each country was used; sample sizes were 93089 for India, 10192 for

Bangladesh, 9556 for Pakistan, and 9608 for Nepal. IBM-SPSS software (Version 19.0) was used for bivariate and multi-variate analyses with a significance level of 5%.

Analyses indicate considerable intra-country differences in contraceptive use, demand, met as well as unmet need, and the determinants. High unmet need often influenced by various policy and program issues, questions the quality of care. Across countries, higher health care autonomy was linearly associated with unmet need for spacing but had an inverse association with unmet need for limiting. Expanding the outreach of family planning promotion campaigns, programs enhancing health care decision making of women, and quality service delivery; all with country specific modifications are pertinent. Informed choice and access to quality services are reproductive rights of every woman, and if addressed, would facilitate better sexual and reproductive health of women in South Asia.

### **263. Abortion in Islamic societies: a comparison of Iran and Indonesia**

*Terence H Hull, Australian National University; Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University; Meimanat Hossein Chavoshi, Australian National University; Ninuk Widyantoro, Indonesian Women's Health Foundation*

The contentious issue of induced abortion has been a major stumbling block in the promotion of women's reproductive and sexual health and rights around the world. In Islamic societies the debates about the secular and religious dimensions of pregnancy termination have referenced a number of schools of Islamic law and teachings. In this paper we compare Iran, the largest Shi'ite society, and Indonesia, the largest Sunni society and largest national population of Muslims in the world, to identify the dimensions and dynamics of the debates over abortion. Both countries display differences of opinion among clerics and some confusion about the place of secular law in regulating the medical practice of abortion. It is difficult to analyze the demographic dimensions of abortions rates, ratios and trends, without valid and reliable data and many of the parliamentary and religious debates are thus riven with misinformation. Demographic techniques to calculate numbers of abortions in each country have failed to achieve valid or reliable estimates. It appears that the main determinants of local policies arise from a general sense of propriety and morality rather than any specific religious doctrines specific to the two streams of Islam. Women's rights are constrained by primordial culture entwined with Islamic legal arguments.

### **264. Does Childhood Nutrition Predict Health Outcomes during Adulthood? Evidence from a Population-Based Study in China**

*Yaqiang Qi, Renmin University of China; Jianlin Niu, Chinese Academy of Social Sciences; Guoshu Kong, Renmin University of China*

Early life conditions have profound long-term health consequences over the life course. However, previous studies concentrate almost exclusively on the detrimental impact of fetal and early childhood malnutrition on adult health; by contrast, little attention has been paid to late childhood nutrition, which is also highly relevant in one's growth trajectory and health outcome. This is the case especially in developing countries. We use data recently collected from a nationally representative sample survey of the Chinese population to explore the impact of late childhood nutrition intakes on adult health. The underlying linkage between childhood nutrition, adult height and a broad range of subjective and objective health indicators will be examined.

### **264. Kinship Matters: Long-Term Mortality Consequences of Childhood Migration, Historical Evidence from Northeast China, 1792-1909**

*Hao Dong, Hong Kong University of Science and Technology; James Lee, Hong Kong University of Science and Technology*

This paper is one of the first studies to shed light on the long-term mortality consequences of migration and resettlement for children. We trace 30517 males from childhood onwards between

1792 and 1909, 542 of whom experienced childhood migration. We take advantage of discrete-time event-history method and introduce fixed effect of grandfather to account for unobservable characteristics of extended family. We also explore one pathway for the influence of early-life migration experience by including kin density as a measure of social integration at destination. From age 16 to 47, social integration at destination mediates the negative effects of childhood migration and lowers mortality risks. Moreover, child migrants who survive to older ages subsequently experience lower mortality. Such findings contribute to a better understanding of the implications of social behavior and social context for human health.

#### **264. Multi-Generational Transmission of Maternal Stress in Pregnancy: Evidence from the 1980 Kwangju Uprising in South Korea**

*Chulhee Lee, Seoul National University*

There is growing evidence that maternal psychological stress during pregnancy, negatively affects a wide variety of offspring outcomes. Animal studies suggest that negative influences of maternal stress during pregnancy persist across multiple generations, but there is little direct evidence confirming that it is present among human populations. This study draws evidence on the intergenerational influences of maternal stress from the Kwangju uprising (May 18-27), arguably the bloodiest incidence that has occurred in South Korea since the end of the Korean War in 1953. The micro files of the 2000 and 2002 Vital Statistics of South Korea are utilized for the study. The results of difference-in-difference estimations suggest that in-utero exposure to the Kwangju uprising significantly diminished the offspring birth weight and length of gestation. The impact of exposure to maternal stress differs by stage of pregnancy when the shock is received. Exposure to stress during the second trimester of pregnancy exerted the strongest negative effect on grandchildren's birth weights. As for the length of gestation, the second and third trimesters were equally critical.

#### **264. The effect of early-life and mid-life factors on old age mortality**

*Soren Edvinsson, Centre for Population Studies, Umea University; Göran R Broström, Umeå University*

Early-life effects on old-age mortality and how these effects may be mediated by intermediate events are studied. Data come from 19th century northern Sweden in the form of digitized life trajectories from the Demographic Data Base, Umeå University, more specifically the Sundsvall region. The causal pathway from an exposure to an outcome is a topic that lately has been attracting strong attention. Of special interest is how to measure and estimate the mediating effect of factors on the causal pathway. We use infant mortality (IMR) at birth as a proxy for early-life conditions, and the mediator is socio-economic status (SES) in mid-life. The research question is thus: Is there an effect of IMR at birth on life expectancy after age 60, and if so, is this effect mediated by SES in mid-life, say around the age of 50? In the 19th century sources, socio-economic status or profession is rarely noted for women. For this reason this study only includes men. The results do not support the hypothesis that conditions in early childhood have a detrimental effect on health in old age.

#### **265. Dynamiques familiales, migrations et scolarisation des enfants dans un contexte rural malien**

*Marie Lesclingand, Université de Nice Sophia-Antipolis; Marc Pilon, Institut de Recherche pour le Développement (IRD); Mélanie Jacquemin, Ird*

Cette communication aborde la question des migrations dans l'enfance à travers l'évolution des différents types de mobilités « indépendantes » (confiage, scolaire, travail) en milieu rural malien. La généralisation de l'expérience migratoire des filles et des garçons au fil des dernières générations, est principalement induite par le développement des migrations juvéniles de travail.

Dans un contexte où la scolarisation a aussi nettement progressé depuis les années 1990, on examinera ensuite comment migrations économiques et migrations scolaires s'articulent : ces deux formes de mobilité sont-elles en concurrence et de quelle manière ? Relèvent-elles de stratégies différentielles à court terme (migrations de travail dans un contexte de crise économique) et à plus long terme (investissement dans une scolarisation prolongée, impliquant des migrations scolaires) ? Ces différentes logiques migratoires traduisent-elles aussi l'émergence de stratégies plus individuelles d'apprentissage et de construction de l'autonomie, liées aux transformations des normes de l'enfance et de la jeunesse ? Ces questions seront traitées en combinant approches démographique et socio-anthropologique à partir d'un corpus de données quantitatives et qualitatives issues d'un système de collecte longitudinal mis en place en 1987 en zone rurale malienne.

### **265. Internal Migration, Remittance, and Contraceptive Use in India**

*Apoorva Jadhav, University of Pennsylvania*

This study examines the association between internal migration and contraceptive use of households at origin, and the mediating effect of increased household income through remittances. The India Human Development Survey (2004-2005) is used to ascertain patterns of contraceptive use households with and without migrants. Overall, the experience of migration is critical: Households with a migrant have significantly higher contraceptive use than households without a migrant. Also, additional income is important: In low fertility regions (TFR at or less than 2.1), some remittance is associated with lower contraceptive use, while in intermediate fertility regions (TFR between 2.1 and 2.7), high remittance amount is associated with increased contraceptive use despite controlling for spousal absence. Family planning programs targeted at increasing contraceptive use among women must consider the importance of migration and diffusion of ideas in influencing contraceptive decisions. Future studies should account for potential influence of accumulated wealth, and how it manifests itself in family decisions regarding optimal family size.

### **265. Migrations temporaires : un élément fort des stratégies d'adaptation des ménages face aux contraintes démographiques et environnementales en milieu rural sénégalais**

*Valérie Delaunay, Institut de Recherche pour le Développement (IRD); Richard Lalou, IRD (Institut de Recherche pour le Développement); Laetitia Douillot, Institut de Recherche pour le Développement (IRD); Djibril DIONE, Institut de recherche pour le développement*

La migration vers les villes est observée en tout lieu et est liée au développement urbain et aux modifications du mode de production. Néanmoins, dans certaines zones rurales, cette migration prend des formes temporaires et circulaires qui permet aux populations de ne pas rompre le lien avec leur village d'origine, voir même de participer activement au développement d'activités agricoles ou extra-agricole de leur communauté. Ainsi, dans la région du Siin au Sénégal, la population sereer s'adapte aux contraintes climatiques et d'accès à la terre en s'appuyant sur l'engagement d'une partie de ses membres dans une mobilité circulaire de courte durée qui permet à la fois un allègement des charges des ménages au village et un retour en numéraire, utilisé aussi bien pour combler une insuffisance alimentaire qu'être investi dans d'autres activités génératrices de revenus. Nous proposons ici d'utiliser les données longitudinales d'un suivi de population sur 30 ans (système de suivi démographique de Niakhar) pour décrire l'évolution des mouvements saisonniers de travail et analyser leur rôle dans l'adaptation des ménages aux contraintes démographiques et environnementales.

## **265. Parental Absence and Child Educational Outcomes in Rural South Africa: Do State Educational Policies Matter?**

*Samuel Kojo Antobam, University of the Witwatersrand*

Literature shows that effect parental absence due to migration and death on child educational outcomes is mixed. Children whose parents are dead or absent for a long time have been found to perform poorly in school (Wright, 2010), while temporary migration seems to have adverse effect on aspiration for higher levels of education among children (Kandel and Kao, 2001). But evidence from Guatemala shows that remittance from migration enables households to spend more on education and reap better returns than non-remittance-receiving households (Adam, 2005), while paternal migration in early life of a daughter increases her educational attainment by a year in Mexico (Antman, 2012). These mixed results could be attributed to contextual factors such as state educational policies that mediate the effects of parental migration on child educational outcomes. I would like to argue that contextual factor such as state policy of free education can neutralise the effect of parental migration on child educational outcomes. Using discrete-time logit event history model on longitudinal data from Agincourt Health and Population Unit, South Africa, preliminary results show that state educational policy such as free education seems to neutralise the effect of parental labour migration on child educational outcomes among rural populations.

## **266. The Place of Gender in the Demography of Forced Migration**

*Ellen Percy Kraly, Colgate University*

The United Nations High Commissioner for Refugees reported the proportion of females among the 2010 global population of persons of concern as 49 percent of 33.9 million. Deviations from this overall proportion in particular places and spaces, and at different times in processes of forced migration provide the insight into the role of gender in forced migration and its demography. Issues of vulnerability, rarely resilience, however, flow from these metrics. In this paper I engage the ways in which gender informs the understandings of the demography of forced migration. Cultural values and social norms concerning gender are significant determinants of relative risk and exposure in complex humanitarian emergencies and environmental crisis which result in human flight, displacement and the search for safe haven. Failure to consider gender in the demography of forced migration weakens the relevance of demographic analysis for prevention of and response to complex humanitarian crises.

## **266. Adaptation and Return Strategies of the Second-generation Afghan Refugees in Iran**

*Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University; Rasoul Sadeghi, Tehran University; Graeme John Hugo, University of Adelaide; Peter Francis McDonald, Australian National University*

In the burgeoning migration literature much of the attention both among researchers and policy makers focuses on voluntary migration while forced migration is of major significance in the contemporary world. Understandably there is a focus on the movement of refugees from the country of origin to the destination place but it is also relevant to ask whether refugees who arrive in the destination place will remain and adapt to the host society, and if so, to what extent their adaptation patterns influence their return strategies. This is the area in which the present paper seeks to make a contribution by examining the experience of second-generation Afghan refugees in Iran. Using the survey of 'the Adaptation of Afghan Youth in Iran' conducted in Tehran and Mashhad in 2010, the paper addresses the following questions: What are the patterns of social adaptation among second-generation Afghans? What are the return aspirations and intentions of second-generation Afghans? To what extent do the adaptation patterns influence their return strategies? The findings suggest that the second-generation Afghans have experienced a variety of adaptation patterns, and their adaptation patterns have significant impacts on their decision to return to their homeland or to move to another destination.

### **266. Forced migration in Brazil: the predominance of African refugees**

*Marília Calegari, State University of Campinas (UNICAMP); Rosana Baeninger, Nepo/Unicamp; Roberta Peres, NEPO - UNICAMP*

The flow of African immigrants to Brazil raises questions about the reasons for migrating. There is a new flow of Africans to Brazil by the means of multilateral agreements, but there is also still continuous refugee immigration to the country. The paper aims to understand the reality of migration and living conditions of African refugees nowadays in Brazil, as origin and destination locations are punished by poverty, exclusion and inequality. The methods used for the research include literature review, documents study, laws, international treaties, and surveys. The main data sources used were UNHCR and the survey about Living Conditions of Refugee Population (CVPR) in Brazil, coordinated by Professor Rosana Baeninger (NEPO/Unicamp). In 2011, Brazil had 4477 refugees, of whom 63.7% were from Africa. Thus, it is relevant to differentiate both flows – new migrants and refugees - discussing the concept of forced migration (Aydos, 2010) and glancing over Brazilian political and institutional context (Moreira, 2012).

Keywords: forced migration; refugees; Brazil

### **266. Forced Migration, Fertility and Reproductive Health: A Review**

*Victor Agadjanian, Arizona State University*

The paper reviews research on forced migration and fertility, identifies problems and challenges in this research and present suggestions for future research avenues and priorities. It starts with a critical examination of the definitional ambiguities that hamper and constrain research on forced migration and fertility, then outlines the current state of the field, and offers suggestions on how the field could be advanced by critically incorporating theoretical paradigms and models applied in studies of the association between voluntary migration and childbearing and accounting for both the changing nature of forced migration and the changing global fertility landscape. It concludes with a discussion of possible directions for research in the area of forced migrants' reproductive health.

### **267. Social Relationships and Suicide in Comparative Perspective: A New Look at Durkheim's Old Inquiry**

*Ning Hsieh, University of Pennsylvania*

Suicide is not only linked to individuals' psychological distress, but more fundamentally, it is a product of social and cultural conditions. Although previous research starting from Durkheim's theory on solidarity generally suggests a negative association between social integration and suicide rates, few studies have explored the subject across different regions of the world. This study demonstrates how various social relationships are related to the prevalence of suicide differently by region. It uses multilevel regression models to analyze data from 30 countries that represent East Asia, Latin and North Americas, and Europe. The results show that East Europe has the highest suicide rates, followed by East Asia, North Europe, West Europe, North America, South Europe, and then Latin America. Although in general more integrated social relationships are associated with lower suicide rates, social relationships carry unequal weights in different regions. For example, marital dissolution predicts significantly higher suicide rates in East Asia and South Europe. Religious participation is linked to less suicide in Latin America but more suicide in East Asia and West Europe. The findings indicate that similar forms of social relationships may function dissimilarly in different cultures and institutions.

## **267. Feminist Perspectives on Motherhood and Assisted Reproduction**

*Gerda Neyer, Stockholm University; Laura Bernardi, University of Lausanne*

Motherhood and reproduction have been at the core of feminist discourses about women's rights ever since its onset. For the first and second feminist movements, the right to abortion and the public recognition of motherhood have been main issues in reproduction discourses. Since the last two decades of the 20th century, the potentials of assisted reproductive technologies (ART) have opened up new venues of feminist discourse. In this paper we sketch the main feminist lines of argumentation regarding motherhood and assisted reproduction since the 1970s, and we identify specific shifts in their recurrent issues. An essential contribution of feminism to the understanding of motherhood has been its insistence on the distinction between biological and social motherhood. ART has further decomposed biological motherhood and has altered the meaning of motherhood and reproduction. It has also shifted the focus from “quantum” (the number of children) to “timing” (when to have the wanted number of children). Despite the rhetoric of choice surrounding ART, it has not increased women's reproductive freedom. The decomposition of biological motherhood, the medical, legal, and commercial development of reproduction, and the change in the social perception of motherhood have rather established new forms of control over female reproduction.

## **267. Colonisation et population musulmane en Algérie**

*Yves Montenay, ICEG (Institut Culture Économie et Géopolitique)*

Cette communication sera principalement axée sur la période « Algérie française » au sens administratif du terme, avec un aperçu rapide des conséquences au-delà de l'indépendance. Son objet sera la démographie politique, en l'occurrence l'influence du politique sur l'évolution démographique et, plus brièvement, le choc en retour. Après un rapide rappel des données controversées précédant cette période, et un exposé succinct de l'évolution de la mortalité pendant les 80 ans suivants, nous analyserons comment la situation politique a maintenu une fécondité élevée, alors que certains déterminants de sa baisse étaient théoriquement en place, le principal étant la baisse de la mortalité (Jean-Claude Chesnais). Cette dernière a été accessoirement accompagnée par un début d'urbanisation et par la cohabitation avec une population moins féconde, facteurs qui auraient dû jouer dans le même sens. Cela nous amènera à évoquer ce qui a lié mortalité et fécondité en Europe et n'était pas transposable à l'Algérie, notamment du fait de la situation coloniale. Une des conclusions de cette analyse illustre en démographie la constatation opérée dans d'autres disciplines selon laquelle cette époque coloniale était minée par ses propres contradictions.

## **267. Ethnicity and race data collection at some Latin American countries census**

*Thais Tartalha Nascimento Lombardi, University of Campinas; Alessandra Traldi Simoni, Universidade Estadual de Campinas (UNICAMP); Bárbara Roberto Estanislau, Universidade Estadual de Campinas (UNICAMP); Ricardo S. Dagnino, Universidade Estadual de Campinas (UNICAMP); José Mauricio Arruti, Universidade Estadual de Campinas (UNICAMP)*

Latin America has tried to cope with ethnicity and race issues since the beginning of the colonization process till current days, therefore, how to collect this information is also a sensible point on census matter. Additionally, different countries build their racial and ethnical identity based on different criteria. From that we built an analysis of the criteria used by the last two Censuses round of Argentina, Brazil, Colombia, and Ecuador in South America. For that, initially, census criteria used to represent ethnic and racial categories in those four countries were assembled into a comparative table. Following it were assessed the constitutional and law changes concerning ethnical and racial issue, alongside the social movements/civil society demands for the same period. It made possible seeking the changes on census criteria for ethnic and racial data collection within and among those countries, highlighting the differences on how each country

officially deal with their population diversity, as much as the legal disposition and census criteria intertwining changes. The results lead us to the main argument of the text: racial and ethnical data are a product of constitutional disposition reviews motivated by social demands and political relations in a very controversial environment.

### **268. Allostatic load and health: a crossed-lagged analysis of the English Longitudinal Study of Ageing (ELSA)**

*Sanna Read, London School of Hygiene and Tropical Medicine (LSHTM); Emily M D Grundy, University of Cambridge*

Allostatic load has been conceptualised as a biological burden induced by chronic stress which predicts health outcomes. Few studies have investigated whether this is the case. We investigate reciprocal associations between allostatic load, limiting long-term illness and self-rated health using cross-lagged longitudinal modelling. The sample included men and women aged 52+ who participated in Wave 2 (2004) and Wave 4 (2006) of English Longitudinal Study of Ageing (n = 4,688 in wave 4). Allostatic load was measured with nine biomarkers using a multisystem summary approach. Self-rated health was measured using a global 5-point indicator; the measure of limiting long-term illness was dichotomous. Autoregressive cross-lagged models between allostatic load, limiting long-term illness and self-rated health in waves 2 and 4 were tested. Models were adjusted for age, gender and education in wave 2, and for time-varying variables of being married, wealth, physical activity, smoking, and social support. Allostatic load predicted limiting long-term illness. The association between allostatic load and self-rated health was reciprocal, and the strength of the estimates suggested that the path from poor self-rated health to low allostatic load score was stronger than the path from low allostatic load to poor self-rated health.

### **268. Exploratory SEM on longitudinal data: Causal modeling in the absence of a priori hypotheses**

*Alan A Cohen, Université de Sherbrooke; Emmanuel Milot, Université de Sherbrooke*

Structural Equations Models (SEM) are normally used to test the agreement between the data and a hypothesized model of causal relationships among multiple variables. However, in many circumstances it is hard to define one or several causal models to test, either because there is insufficient understanding of the field or because too many variables are involved. A prominent example is studies using biomarkers in population health, where the biomarkers are presumably parts of physiological regulatory networks that are still poorly understood. In this case, an exploratory version of SEM is needed to define a limited subset of models that are in agreement with the data, and which can be further tested. Here, we present such a method using longitudinal biomarker data. The algorithm explores all identified three-variable models and uses these results to eliminate as many non-supported causal relationships as possible. The model then proceeds systematically through 4-variable and larger models, incorporating the results of the lower-order models. Gradually this process builds a consensus set of models in which all non-supported relationships have been eliminated, but which may still contain ambiguous relationships. These models can then be tested in independent or test data sets set aside for this purpose.

### **268. You snus you lose? The effect of Swedish snus on offspring birthweight: a quasi-experimental sibling analysis**

*Sol P Juárez, Centre for Economic Demography, Lund University; Juan Merlo, Unit of Social Epidemiology, Lund university*

The association between maternal smoking during pregnancy and offspring's birthweight reduction is very well established. However, less is known about the effect of smokeless tobacco on birthweight and about the specific mechanism through which smoking reduces birthweight.

This paper aimed at filling these knowledge gaps by studying the effect of maternal Swedish snuff use during pregnancy (SUDP) on offspring's birthweight. Swedish snuff is grounded tobacco without any toxic substance added, which provides us with the opportunity to isolate the effect of nicotine on birthweight. With data from the Swedish Medical Birth Register (2002-2009), we applied a sibling analysis using multilevel linear regression model (50,497 siblings nested within 23,443 mothers). This design has potential to study causal associations since, it accounts for unknown genetic and environmental characteristics of the mother associated to both tobacco habits and offspring birthweight. Our results show that SUDP does not have an effect on birthweight reduction.

### **269. Comparison of Living Arrangements and Family Support for the Urban Elderly** *Ik Ki Kim, Dongguk University*

This study tries to compare the differences of the living arrangements of the elderly and thus show the different patterns of the family support for the elderly in Korea and China. China has a huge population with diverse characteristics, while Korea is a small country with homogeneity. For a more sophisticated analysis, this study selects the urban elderly of Incheon-Gyeonggi Province in Korea and Shandong Province in China.

This study is based on analysis of the data from the same questionnaire for the elderly in Chinese and Korean cities. Korean data (2,010) for the Incheon-Gyeonggi Province were collected in Incheon Special city and 17 cities in Gyeonggi Province. This study employs frequency distribution, cross-tabulation and logistic regression analysis for the statistical analysis.

### **269. Family support and disability among Filipino older people** *Grace Cruz, University of the Philippines Population Institute*

Data from the 2007 Philippine Longitudinal Study on Aging (PLSOA) show at least 15 percent of older Filipinos have some level of functional disability. Functional disability measured in terms of activities of daily living (ADL) was found to be increasing with advancing age and is higher among the females than males. On the average, those who experienced some form of functional disability reported an average of 3 ADL difficulties. Among the seven ADL activities examined, older people found it most difficult standing up or sitting down and going outside/leaving the house while eating was found to be least strenuous. Our findings show various levels of severity and need of assistance among those who found difficult in performing any of the ADL tasks. Generally, older Filipinos receive significant amount of monetary and non-monetary support from their family. This includes remittances from children from abroad. Support for older people is manifested in their living arrangements with most of the older person found to be coresiding with their children.

Study findings point to a strong association between functional health status and the level of family support received by older people. Particularly, significantly more support is provided to those who experience functional difficulty.

### **269. Gender and intergenerational coresidence of the elderly in India** *Laishram Ladusingh, International Institute for Population Sciences*

Social institutions and the patriarchal system in India deprive women of taking the role of head of the household when their husbands are alive and most often, they have to depend on children once they become widows. We unravel these unwritten social norms conventionally practiced in terms of intergenerational co-residence of elderly females versus males with children in self or spouse support providing and in child headed support receiving households from the perspective of the elderly. Analysis of nationally representative samples of 15,649 females and 16,240 males 60 years and above revealed that co-residence in child headed households among elderly females is 53.6 percent as against 26.5 percent among elderly males. More than 70 percent of widowed or

widower/divorced/separated elderly co-reside in child headed support receiving households. The vulnerable non-literate, economically dependent and physically immobile females are more likely to co-reside in child headed households than their male counterparts. About 56 percent of elderly males lived with children in self or spouse headed households indicating that children too benefit from parents particularly for housing.

### **269. Living Arrangements of the Elderly in Vietnam: Adaptation to Change**

*Cuc Thu Hoang, Australian National University*

Vietnam is experiencing an increase in the share of the elderly population (people aged 60 and over) and profound social and economic changes at the same time. Co-residence with children is the traditional means of support for the elderly. Given the minimal coverage of formal care, concern has been voiced that the increasing old age dependency ratio and the strong flow of rural-urban labour migration among younger adults will threaten the viability of the traditional support system for the elderly. By analysing the secondary data of Vietnam (Housing) Living Standard Survey (VHLSS 1993-2010), Vietnam National Aging Survey 2011, and qualitative case study data, this paper aims to describe different living arrangements of the elderly and how these patterns have been shaped by the changing conditions. The preliminary results show that while the majority of elderly live with children, this type of family support is changing. Elderly living alone or with their spouse only is increasing. Quasi-co-residence, rotation residence, or living with grandchildren can be regarded as coping mechanisms to maintain intergenerational support under changing conditions. Living in private or state institution covers only small proportion of the richest and poorest sections of the elderly population.

### **270. Urban and demographic transitions in Belgium in comparative perspective**

*Philippe Bocquier, Université Catholique de Louvain; Rafael Costa, Université Catholique de Louvain*

This paper is an attempt to analyse the relationships between demographic and urban transitions using long-term historical data from Belgium (1841-1976), and compare these transitions with those of Sweden (1750-1955), Sri Lanka (1890-1965) and possibly other countries. The methodology differs from previous analyses in that it identifies the respective roles of fertility, mortality and migration in the transition. While nuancing the role of urban mortality in triggering early demographic transition, and underlying the role of urban fertility in more recent transitions, results reinstate migration as the major component of urban transition. Belgium data at provincial level also help deciphering the role of different type of economic development. Theoretical consequences on the role of economic changes in urban and demographic transitions are then drawn.

### **270. Does cohort size matter to residential mobility? The case of Barcelona's central city**

*Antonio Lopez Gay, Centre d'Estudis Demografics; Clara H. Mulder, University Of Groningen*

Following up Easterlin's arguments about the impact of cohort size on demographic issues, the paper aims to explore the implications of cohort size in the specific context of residential mobility. The research is based on the case of the inner city of Barcelona. There are two elements that make this case study relevant. Firstly, fertility decrease was extraordinary fast in Spain. That produced big size differences among cohorts born within a short period of time. Secondly, the intensity of residential mobility is low and very concentrated in the household formation ages. This characteristic emphasizes the importance of cohort size in terms of competition: after members of large cohorts have moved they no longer cause a strong pressure on the housing market. The paper looks for differences in patterns of residential behavior between baby-boom and baby-bust cohorts in two main aspects: the timing of the movements and the territorial distribution within the Metropolitan Area of the individuals moving from the central city. According to the literature,

large cohorts face greater competition than small cohorts in multiple aspects, among which the housing market. Thus, it is expected that boomers will move later and farther than smaller cohorts.

### **270. Marriage and Household in Early Modern Northeastern Japan: Rural-Urban Similarity and Diversity**

*Satomi Kurosu, Reitaku University; Miyuki Takahashi, Rissho University*

Regional variation is an integral part of Japanese historical demography. At least three different patterns of population and family are suggested to have coexisted in three geographic boundaries in early modern Japan: northeast, central, and southeast. However, the evidence for the three patterns are either based on macro level studies or on micro level studies of a few villages in each region. This paper challenges this general categorization and tries to examine "northeastern" pattern of marriage and family using household registers 1716-1870 from diverse economic settings: two rice farming villages, one village enriched by cash crop agriculture, and one booming local post town. We apply the event history analysis model proposed by the Eurasia project for examining marriage responses to economic stress and household context. The results of this study should provide more careful examination of the northeastern pattern and marriage in its relation to household socioeconomic status and context at various stages of local economic and population development.

### **270. Social Composition and family Structure of Slums and Non-Slums households: A Study in Selected Cities of India**

*Sayan Roy, Central University Of Karnataka, Gulbarga,India; Ram Babu Bhagat, International Institute for Population Sciences (IIPS)*

Slums are present in urban India from colonial periods. Indian urban family structure is in a transitional stage and it is gradually moving from joint family to nuclear family culture. The rapid urbanization and increasing the number of urbanites changes the traditional family structure and religious composition. Traditionally Indian family was Joint in society. Religion and Caste play a vital role for determining the family structure and social composition. Slums are mainly dense households, settling beside the roadways, along the railway tracks, haunted industrial set up in urban environment. Cities' social areas are determined by these two components. The social and family composition varies from cities to cities based on religion and caste composition. The study shows the comparison between slum and non-slum households in eight cities. The data have been chosen from National Family Health Survey Report of round-III and analyzed. The data have been collected based on census enumeration blocks, designed during Census enumeration of 2001. In order to manage the large sample of eight cities, a representative sample of approximately 2000 households were drawn, with about 1000 households from each enumeration areas designated as slum and non-slum areas within the municipal corporation limits of the cities according to 2001 census.

### **271. De l'importance des capitaux humain et social dans l'insertion des jeunes sur le marché du travail : cas d'une ville moyenne du Cameroun (Bafia)**

*Samuel Nouetagni, Institut de formation et de Recherche Démographiques (IFORD); Mathias KUEPIE, CEPS-INSTEAD*

Contrairement à la théorie néoclassique qui considère le capital humain (en l'occurrence l'éducation) comme le principal déterminant des gains individuels sur le marché du travail (Cohn et Geske(1990), Gary Becker(1964)), les théories alternatives (Stiglitz(1975), Arrow(1973), Spence(1973)), montrent que les facteurs sociaux jouent aussi un rôle non négligeable dans l'insertion professionnelle (Kamanzi, 2006). L'article s'inscrit en droite ligne des théories alternatives au capital humain et vise à mettre en relief les limites de l'éducation qui, semble être perçue comme une panacée dans le processus d'insertion des jeunes. Nous montrons que le

«capital social» au sens de Bourdieu(1980, 1985) joue également un rôle non négligeable. Nous portons également une attention particulière aux effets d'interaction entre capital humain et capital social afin de déterminer si ces deux facteurs jouent de façon cumulative ou additive. Les données proviennent d'une enquête biographique menée dans une ville moyenne au Cameroun en 2010, sur «pauvreté et les besoins non satisfaits en santé de la reproduction des jeunes et adolescents à Bafia» et portent sur 1577 jeunes et adolescents de 15-34 ans. L'analyse mobilise essentiellement les méthodes d'analyse des biographies, notamment la méthode Kaplan-Meier et les régressions de COX.

### **271. Facteurs d'accroissement des taux de scolarisation en Afrique subsaharienne : des années 1990 à l'heure du bilan des OMD**

*Crispin Mabika Mabika, Université de Kinshasa*

Depuis les indépendances africaines dans les années soixante (1960) jusqu'à une période récente à l'ère du bilan des OMD, la scolarisation en Afrique sub-saharienne a été analysée à partir de l'offre et ou la demande. Pour répondre à l'opportunité de la richesse des données socio-démographiques remontant à plus de deux décennies de collecte à côté des bases de données macroscopiques aussi riches, la présente communication procède par plusieurs techniques d'analyses pour revisiter les facteurs déterminants de la scolarisation en Afrique sub-saharienne. L'étude procède tout d'abord par établir des relation entre les dépenses publiques en éducation et les taux de scolarisation atteints par les pays disposant, entre 1990 et 2010 d'au mois deux enquêtes EDS ou MICS. Ensuite, grâce aux données individuelles, des caractéristiques des ménages et membres respectifs sont analysées comme des facteurs explicatifs de la scolarisation. Pour finir, les profils des ménages favorables ou défavorables à la scolarisation des enfants sont analysés pour en vérifier l'évolution (taille et composition) durant la période de référence. Les résultats devraient aider à déterminer si l'amélioration de la scolarisation dans cette région est tributaire aux comportements des ménage ou au contraire à l'évolution des structures qui ont été identifiées.

### **271. Mobilité sociale intergénérationnelle au Maroc**

*Abdelkader Teto, Haut Commissariat au Plan morrocco*

L'analyse de la mobilité sociale intergénérationnelle, principale volet de la mobilité, constitue un axe important pour se rendre compte du degré d'intégration et de cohésion sociale dans une société. Par essence, elle constitue une mesure de l'équité sociale et évalue la mesure dans laquelle une société traduit dans la réalité les principes d'égalité des chances. Son étude consiste à comparer la position sociale du fils (ou de la fille) par rapport à celle de son père et se fonde sur une classification de l'espace social représenté par des catégories socioprofessionnelles (CSP) hiérarchisées. Sur la base des données d'une enquête, la première du genre au Maroc, réalisée par le Haut Commissariat au Plan en 2011, auprès d'un échantillon large de 64 000 ménages, le présent papier permet de présenter la méthodologie utilisée et les tables de mobilité sociale intergénérationnelle qui en découle, de mesurer ses différentes formes et d'examiner les facteurs de la transmission du statut social des pères à leurs fils, et de montrer le rôle de la formation et des inégalités scolaires et sociales dans cette transmission du statut social.

### **271. Residential Mobility, Education and Social Mobility**

*Jean François Kobiane, Université de Ouagadougou*

There has been an extensive literature on the relation between education and social mobility, and more specifically the extent to which education can ensure intergenerational mobility regarding different social and economic positions in the society. In the context of sub-Saharan Africa with enormous inequalities in access to resources and where at the same time traditional solidarity networks through the extended family, play a role of social safety nets, one can argue that the social support to the more disadvantaged people in the society can be a leverage to enabling

intergenerational mobility. Using event history data collected in Burkina Faso in 2000 which concerned 8,644 individuals aged 15-64 years at the time of the survey, we analyze residential mobility, education attainment, and movements of three synthetic cohort (1975-85, 1965-74 and the 1955-64 birth cohort) across social stratification ladders, comparing their family socioeconomic status background to their socioeconomic status at the time of the survey.

**272. A Comparative Analysis of Time Transfers between Generations and Genders**

*Emilio Zagheni, Queens College, City University of New York (CUNY); Marina Zannella, Sapienza Università di Roma*

Reallocation of economic resources between generations has important consequences for economic growth and inequality. This study provides estimates of time transfers between generations and genders, and complements existing literature on monetary transfers. We use data from the Multinational Time Use Study (MTUS) to estimate age- and sex-specific profiles of time allocated to unpaid productive activities for a number of countries. The unpaid working time is then distributed, with a statistical model, to those age groups that benefit from it, in order to estimate age-specific consumption profiles of time. We observe large transfers of time from females to males, and from adults to children and the elderly. Life course trajectories are qualitatively similar across countries, but with significant variations in levels. Differences in profiles by household structure allow us to evaluate the extent of incentives and disincentives for particular fertility choices in different social and institutional settings.

**272. Gender disparities in housework in France: lessons from last 25 years**

*Ariane Pailhe, Institut National d'Études Démographiques (INED); Anne Solaz, Institut National d'Études Démographiques (INED)*

In developed countries, there has been large progress towards gender equality in many fields, in particular employment. However, gender inequalities are still huge in the domestic sphere. In particular women still perform the bulk of domestic and parental tasks in spite of the dramatic increase in the number of dual-earner couples. The aim of this study is twofold. First it intends to describe the long term evolution of male and female involvement in housework and parenting. Second, it aims at disentangle factors that plays in favor of an increasing or a decreasing of gender gap in housework, i.e. technical progress, changes in family structure, social changes and changes of norms. The three last French time-use surveys provide a unique tool to analyze the evolution and the determinants of gender gap in housework during the last 25 years. We show that male involvement evolves extremely slowly while that of women decreases. Using Oaxaca decomposition techniques, we conclude that changes in family structure, the level of female education and labor market participation and in domestic equipment explain the decrease of gender gap in housework but the persistence of traditional roles of men and women acts as a brake on these changes.

**272. The transition to the first birth and labour market trajectories: the interrelation of micro and macro social factors**

*Ana Laura Fostik, Institut National de la Recherche Scientifique (INRS); Benoît Laplante, Institut National de la Recherche Scientifique (INRS)*

This article assesses the micro and macro social factors that explain changes in the transition to the first birth and the entry into labour market in a Latin-American country with a peculiar demographic evolution: Uruguay. First, we examine the timing of the first birth and the timing of entry into the first full-time job of several female cohorts. We take into account the endogeneity of the decision-making process in the reproductive and productive spheres by estimating the mutual effects of reproductive and labour-market transitions on one another. Secondly, we study the interactions between the socio-economic context and the individual biographical characteristics, in

a context of increasing female activity rates and higher levels of societal risks in the region. We evaluate the responses in the productive and reproductive behaviour to the changes in market and economic conditions. We focus on the characteristics that are more critical in determining the levels of social risk, most importantly unemployment rates and economic growth, seeking to establish the presence of pro-cyclical or anti-cyclical effects in individual reproductive trajectories—mediated by the labour market trajectories as well as the cohort, social origins and educational attainment levels. We use longitudinal survey data (2001 and 2008).

### **272. Trends in Patterns of Employment since the German Reunification and the Wellbeing of Parents in Eastern and Western Germany**

*Angelika Tölke, German Youth Institute; Heike Wirth, GESIS*

Two decades after reunification, the contrast between eastern and western Germany offers a natural experiment for studying the change in the employment patterns of parents. Historically both parts of Germany had different family and labor market policies: East Germany supported high female labor force participation whereas in West Germany the male breadwinner model was the norm. Hence, the question is: To what degree are these patterns of employment behavior persistent to this day? And beyond this, how do the changes in parental employment in Germany compare to international developments? A second aim of this paper is to examine the impact of employment patterns on parents well being. In West Germany labor force participation and the responsibility for the family were usually seen as a “double burden“ for women whereas in East Germany parents became accustomed to full time employment of both partners. In light of different cultural and infrastructural backgrounds, how comfortable do parents feel with their working arrangements and their family life in both parts of Germany? Data from the German Microcensuses 1991 to 2009 and from the representative survey AID:A (Growing up in Germany) conducted in 2009 are used.

contact: toelke@dji.de heike.wirth@gesis.org

### **273. A moveable feast? The flexibility of fertility preferences in a transitioning Malawian community**

*Jenny Trinitapoli, Penn State University; Sara Yeatman, University of Colorado at Denver; Hannah Furnas, Penn State University*

Recent studies suggest a rapid change in fertility preferences among young adults across sub-Saharan Africa. In this study, we examine the sensitivity of Malawians’ fertility preferences to a variety of hypothetical (but common) events that may alter fertility preferences and intentions. Using new data from the Tsogolo la Thanzi (TLT) study in southern Malawi, we analyze expected changes in desired number of children (quantum) and the pace of childbearing (tempo) in response to this variety of events. We further employ the Coombs scale, a measure of underlying family size preferences, to predict the direction of both dimensions of fertility preferences. To measure tempo change, the survey questions respondents about their preferred timing to next birth. We find 1) that both the quantum and tempo dimensions of fertility preferences are most responsive to AIDS-related conditions and 2) that young adults’ preferences are relatively impervious to changing economic conditions and family issues. Our results indicate that the generalized AIDS epidemic in Malawi is critically important for understanding young people’s fertility preferences and, ultimately, their behaviors.

### **273. Exploring the tempo-quantum interplay in the period fertility trends in India**

*Uttamacharya Uttamacharya, International Institute for Population Sciences; Perianayagam Arokiasamy, International Institute for Population Sciences*

India is steadily approaching replacement level fertility with half of the states already reaching below replacement level fertility; while most of the other states except few bigger states are

progressing faster to replacement level fertility. The virtual low fertility in most states of India attracts necessary attention to the tempo distortions in the period fertility measures. To explore the role of tempo versus quantum effects of fertility on period fertility measures in India, we use pooled data from the three rounds of national family health survey. Converting birth history data into person period format, this paper reconstructs period fertility trends for India and investigates the tempo distortions caused by the postponement of births in period fertility indicators- total fertility rates in particular. The results of this analysis suggest that cumulated fertility up to age 40 in India declined from around 4.9 in 1983 to 2.6 in 2006. Results reveal remarkable postponement of fertility as depicted by the increase in the mean age at birth by birth orders in India with urban women experiencing more pronounced fertility postponement than rural India.

### **273. Fertility of Turkish and Moroccan women in the Netherlands: second generation are much closer to native women than to their mothers**

*Han Nicolaas, Statistics Netherlands*

The annual figures on the fertility of Turkish and Moroccan women show that the sharp decline that took place up to the mid nineties was reduced or stagnated. In this paper we use cohort data by generation for the main population groups of non-western origin to show that the first generation only adjusted their fertility slowly to that of the native Dutch women. These women of the first generation show comparable (Turkish women) or even higher (Moroccan women) fertility rates than the women in their countries of origin and few signs of assimilation in (fertility) behaviour. The second generation, on the other hand, are much closer to native women in this respect than to their mothers. Turkish and Moroccan women in their early thirties have almost the same number of children than native Dutch women that age. Adjustment to the native Dutch fertility pattern is caused by intergenerational differences, rather than by cultural assimilation of the first generation.

### **273. Is the Age at First Birth in the Genes? A Study of UK Twins**

*Felix Christian Tropf, Rijksuniversiteit Groningen; Nicola Barban, University Of Groningen; Harold Snieder, Rijksuniversiteit Groningen; Jornt J Mandemakers, University Of Groningen; Melinda Mills, University Of Groningen*

This study investigates the genetic component in age at first birth (AFB) for twins from United Kingdom. We decompose the observed variance in AFB into that caused by: genes, shared environment, and the unique environment of twins. We first fit continuous structural equation models followed by the innovation to estimate tobit survival models to include censored cases. Our data contain 2 274 monozygotic (42 %) and dizygotic (58 %) female twin pairs born 1919-1968. Results show that up to 40 % of the observed variance in AFB is due to additive genetic differences. In line with previous research, results underscore the relevance of genetic factors in determining fertility outcomes. A historical comparison of cohorts shows that the genetic component in AFB decreases in more recent cohorts. Results emphasize the relevance of environmental conditions for the expression of genetic predisposition (gene-environment interaction).

### **274. Factors associated with unmet need of family planning and its Impact on population growth in Bangladesh**

*M Sheikh Giashuddin, Jagannath University, Dhaka; Mohammad Kabir, Jahangirnagar University*

In Bangladesh, fertility was high in the 1950s and declined to fewer than five births per woman in the early or mid-1990s like other developing countries. After that the level of fertility is stalled. The aim of this study is to assess the extent of unmet need for family planning among married women of reproductive age group in Bangladesh and to study the factors related to it. Bangladesh Demographic and Health Survey data were used for the study. The results suggest that unmet need

for family planning has increased during the last 3 years from time of the survey. The percentage of total unmet need is especially high among rural women, non working women, Muslim women, and women not exposed to media messages on family planning. The regression analysis shows that age, husband-wife communication, sex composition and visitation status of satellite clinic appear to be significant predictor for limiting unmet need. If we can reduce the current unmet need to zero then current met need will be 73 percent which is the required rate of achieving replacement fertility in Bangladesh. New program strategies are required to fulfill the conventional demand for family planning program in Bangladesh.

#### **274. Insights into Unmet Need in Kenya and Senegal**

*Kazuyo Machiyama, London School of Hygiene & Tropical Medicine; John Cleland, London School of Hygiene and Tropical Medicine (LSHTM)*

This study aims to establish the relative importance of lack of access and attitudinal resistance towards use of family planning in accounting for unmet need among different population strata in Kenya and Senegal. Using 10 DHS data from the two countries, the main analysis extends and adapts the approach used in an investigation of progress in family planning need, access and attitude in Africa (Cleland, Ndugwa et al. 2011). Preliminary results from the most surveys show that in Kenya lack of access is a minor problem and that unmet need stems largely from abandonment of hormonal methods; the central problem is health concerns and side effects. In Senegal, both unfavourable attitudes and lack of access are barriers to use; over 60% of those with unmet need have an unfavourable attitude and one-third have no access to methods. Infrequent sex is deployed as an alternative contraception. Trends in access, attitude and reasons for non-use will be assessed.

#### **274. No contraceptive use and unmet needs among married women in Shanghai, China**

*Yan Che, Shanghai Institute of Planned Parenthood Research; Xiaoyan Ding, Shanghai Contraceptives Supplies and Service Association; Wei Jiang, Shanghai Management Centre for Contraceptive Drugs and Devices; Wenjuan Tang, Shanghai Management Centre for Contraceptive Drugs and Devices; Yuzhi Zhang, Shanghai Population Association*

A family planning survey was conducted in Shanghai in 2011 to investigate contraceptive use and non-use among married women aged between 15 and 49. A total of 21907 participants were randomly selected and interviewed by trained field workers. Findings show that 19.3% of participants did not use any contraceptive method. Among them, 39% were due to wanting a baby, or being pregnant or breastfeeding. Divorce accounts for 23% of all non-users; infertility and menopause 18%, widows and living apart 7%, unmet needs 12% (including concerns of side-effects, health reasons, partners' objection, etc). The prevalence of non-contraceptive use ranges from 15.7% to 27.1% between categories of district's characteristics. The likelihood of non-use is associated with women's age, education, type of work unit, the nature and location of women's Hukou, family income, number of children and ideal family size. Proportions of unmet needs vary between individual's characteristics, ranging from 4% to 27%. The older and less educated women were more likely to experience unmet needs. Family income and number of children were also important determinants of unmet needs. It can be concluded that non-contraceptive use in Shanghai was due mainly to intended pregnancy. However, some gaps of unmet needs still should be bridged.

#### **274. Unpacking unmet need: reproductive health transitions**

*Toshiko Kaneda, Population Reference Bureau; Jill Melissa Hagey, Population Reference Bureau (PRB); Rhonda R. Smith, Population Reference Bureau; Wendy Baldwin, Population Reference Bureau*

Current measures of unmet need for family planning at a single time point mask the magnitude of need women experience across their lifetimes and the disparities in unmet need faced by women of various socioeconomic backgrounds. In this study, we consider unmet need as a transitional state and propose new approaches of measuring unmet need over time. Using the contraceptive calendar data available in the Demographic and Health Surveys (DHS), we examine the number and length of unmet need episodes women experience over a five-year calendar period for 13 developing countries in Africa and Asia, and how these measures vary by household wealth, residence, and education. Our findings suggest that substantially more women experienced unmet need over the 5-year period examined than captured cross-sectionally. However, while women of all backgrounds experience unmet need, older and higher parity women, and women of low SES are more likely to experience longer episodes. Our results indicate the need to scale up family planning services and reach women multiple times across lifetimes. These longitudinal analyses unpack the complexity of unmet need women experience over time and help enable care providers to better meet women's contraceptive needs.

### **275. Living Arrangements of the Elderly in China: Evidence from the CHARLS National Baseline**

*John Strauss, University of South California; Yaohui Zhao, Peking University; Xiaoyan Lei, Peking University; Meng Tian, Peking University*

Declining fertility in China has raised concerns about elderly support, especially when public support is inadequate. Using rich information from the nationally representative China Health and Retirement Longitudinal Study (CHARLS) baseline survey fielded in 2011-12, we find that roughly 43% of Chinese aged 60 and over live with a child; living with a male child being strongly preferred. However another 31% have a child living in the same neighborhood and 13% in the same county; only 5% have the nearest child living outside the same county as the parent and another 8% have no living children. Single elderly men and women living in urban areas (mostly widows and widowers) are more likely to live with their children or have their children living nearby, as are urban elderly residents. Children with high levels of income are less likely to live with their parents or to live nearby, but if parents have higher income, one of their children is more likely to be living with them or nearby. We also find that among non-co-resident children, those living close by visit their parents more frequently and have more communications by phone, email, text messages and regular mail. On the other hand, children who live farther away are more likely to send financial and in-kind transfers and send larger amounts.

### **275. Living Arrangements of the Elderly in China and Consequences for Their Emotional Well-being**

*Qiang Ren, Peking University; Donald J. Treiman, California Center for Population Research, UCLA*

Living arrangements are changing rapidly in China due to the increasing urbanization of the population, the replacement of hutong (courtyard) housing stock with high rise apartments in urban areas, and massive rural-to-urban migration. The result is that it is increasingly unlikely that elderly parents live with their adult children. On the other hand, many urban parents send their children to live with the grandparents, resulting in a new form of multiple generation family, known in China as a "generation-skipping" family. We study the living arrangements and consequences for emotional well-being of the elderly using data from a national probability sample survey conducted in 2010, the Chinese Family Panel Study (14,960 households were included and every family member age 10 and over was interviewed, with information for younger children provided by parents or other adult family members). This sample includes 7,040 people age 60+; this is the group we will study.

### **275. Migration, Location, and Provision of Support to Old-Age Parents Living in Romania**

*Zachary Zimmer, University of California, San Francisco; Codrina Rada, University of Utah*

Rates of internal and international migration in Romania, which are among the highest globally, are consequential for older persons. Migration coupled with rapid population ageing means older persons are less likely to co-reside or live near an adult child. This may impact on the probability of receiving support. Still, systematic data that allow examination of migration and location of residence on the provision of support are difficult to find. Using recently collected data and building upon a family solidarity framework, this study models provision of two types of instrumental support - monetary and physical - as a function of migration status, older adult living arrangements, and individual and familial characteristics. Hierarchical regression models examined from the perspective of about 3,000 adults with older aged parents indicate international migrants are more likely to give money; non-migrant co-residents and near-residents are more likely to provide physical help. Individual, familial and old-age parental characteristics mediate and/or moderate the relationship. Needs of older persons and alternate sources are as important as proximity when predicting support. This has implications for the well-being of the growing proportion of older adults in Romania, as well as older persons in other nations facing similar

### **275. Pathways into long-term care accommodation in Britain: common aspects, differences and policy implications**

*Maria Evandrou, University of Southampton; Jane Cecelia Falkingham, University of Southampton; Olga Maslovskaia, University of Southampton; Athina Vlachantoni, University of Southampton*

Population ageing is a global challenge, and understanding the dynamics of living arrangements in later life and their implications for the design of appropriate housing and long-term care is a critical policy issue. This paper investigates the dynamics of living arrangements amongst people aged 65 years old and over between 1991 and 2008, focussing on two types of accommodation: sheltered accommodation and residential care. The empirical research examines the rates and determinants of moving into sheltered accommodation and institutional care, using all 18 waves of the British Household Survey data and a discrete-time logistic regression model in order to model the probability of entering each type of accommodation. The paper shows that the factors associated with each of the two transitions in later life are different; for example age, health and marital status are significant determinants of an older person's move into residential care, while the move into sheltered accommodation is in addition associated with an older person's housing tenure and highest educational qualification. Such results indicate that the two kinds of transition may be more prevalent in different stages of the latter part of the life course, and have crucial implications for the design of future social care provision.

### **276. A New Perspective on Replacement Fertility**

*Jenna Nobles, University of Wisconsin at Madison; Elizabeth Frankenberg, Duke University; Duncan Thomas, Duke University*

The connections between mortality and fertility have far-reaching implications – for broad subjects like population growth, family building and increasingly, the study of natural disaster. Scholars have long posited familial mechanisms that raise fertility in response to mortality increase, including the “replacement” effect, in which parents increase fertility following a child's death to achieve a desired family size. Despite having a strong theoretical foundation, the volitional replacement effect has slim empirical support. The gap in evidence is often attributed to the methodological challenge of identifying a causal, behavioral fertility response to shifts in mortality. We revisit the replacement question in the context of an unexpected environmental mortality shock: the 2004 Indian Ocean tsunami. We analyze detailed longitudinal, population-representative data collected before and after the tsunami in Indonesia. Using satellite measures of

environmental destruction, we demonstrate a substantial and sustained fertility increase attributable to the tsunami. With data on fertility intentions, family mortality, and women's completed fertility by 2009, we find robust evidence of a volitional replacement effect. We conclude with a discussion of the implications for disaster-afflicted populations.

### **276. Cold ambient temperature in utero and birth outcomes in Uppsala, Sweden, 1915 to 1929**

*Tim-Allen Bruckner, University of California at Irvine; Bitte Modin, Stockholm University/Karolinska Institute; Denny Vagero, Stockholm University/Karolinska Institute*

Although the literature finds adverse birth outcomes following exposure to ambient heat waves in utero, less work focuses on infant health following cold stress. We address this gap in the literature and employ rigorous methodology to test the relation between cold ambient temperature in utero and four perinatal outcomes. We examined 14,000 births in Uppsala, Sweden (1915 to 1929), a population that—unlike most societies today—experienced sub-standard indoor-heating and fewer amenities to provide shelter from ambient cold. Results, which control for season of birth, indicate that the risk of both stillbirth and preterm delivery rises as ambient temperature over gestation falls. Exploratory analyses by sex indicate that the increased risk of preterm appears confined only to male births. Infant birth length (but not birth weight) also declines with lower temperatures. In this historical population, cold stress adversely affects fetal development. Our work holds relevance to maternal-fetal biology as well as to contemporary societies (e.g., indigenous Arctic populations) with limited resources to mitigate the adverse consequences of cold.

### **276. Do Population-Health-Environment (PHE) initiatives work? Evidence from WWF-sponsored projects in Africa and Asia**

*David Lopez-Carr, University Of California, Santa Barbara, Department Of Geogrpahy*

Do Population-Health-Environment (PHE) initiatives work? It offers to combine solutions to population-environment (PE) together with health-environment (HE) for the global conservation of natural resources in developing countries. In doing so, PHE recognizes the importance of considering “conservation, health, and family planning interventions” in the management of some of the world's most impoverished as well as ecologically rich environments (Hahn et al. 2011). In this paper I probe the potential effectiveness of integrated PHE investments for conservation outcomes. The evaluation was conducted in 2007 in WWF high priority marine and terrestrial conservation sites with PHE programs in Philippines, Nepal, India, Mozambique, Madagascar, Kenya, Cameroon and the Central African Republic. I interviewed 754 individuals: WWF staff, health and environment partners and local men and women in individual and focus-group interactions. Quantitative and qualitative results indicate diverse, and in some cases dramatic, improvements in maternal and child health and conservation measures that appeared to synergized by the integrative PHE approach. Results also point toward the importance of investing in livelihoods in tandem with PHE interventions.

### **276. Land Degradation and Fertility in sub-Saharan West Africa: Disaggregating the Demographic Response**

*Isaac Sasson, University of Texas at Austin; Alexander Weinreb, University of Texas at Austin*

Demographic responses to environmental pressures have long been hypothesized in classic population theory, though empirical analyses remain scarce and traditionally focus on aggregate units of analysis. In this paper we test the hypothesis that land degradation since the 1980s led to marriage postponement and fertility reduction in eight sub-Saharan West African countries in the early 2000s. Using georeferenced data from multiple Demographic and Health Surveys, combined with remotely sensed data on land degradation, we examine proximate determinants of fertility among rural women in response to decline or fluctuation in net primary productivity (NPP) over

time. Results consistently show little to no effect of environmental determinants, particularly long-term land degradation, on a set of fertility related outcomes. This is in sharp contrast to the negative association between land degradation and fertility found at the aggregate level. However, recent fluctuations in NPP are negatively associated with age at first marriage, suggesting that early marriage among women may reflect household decisions to diversify and reduce risk. These results call into question the spatial and temporal scales at which demographic responses to environmental pressures occur, and the extent to which these are confounded by economic development.

### **277. Climate, land use and population variability influencing the spatial and temporal distribution of malaria risk in the Amazon**

*Beth J Feingold, Duke University; Benjamin Zaitchik, Johns Hopkins University; Alex Sandoval, DIRESA-Loreto, Peru; Carlos Alvarez Antonio, DIRESA-Loreto, Peru; Rosa Patricia Zagarra Vasquez, DIRESA-Loreto, Peru; William K Pan, Duke University*

Malaria remains one of the world's most devastating public health threats. In Peru, 75% of malaria occurs in the northern Amazon region of Loreto where 80% of cases are concentrated in just 10 districts. Loreto is the least densely populated region of Peru and also the largest. To maintain the declining malaria rates currently seen, better knowledge of where, when and why people are infected is needed. The primary factors affecting malaria endemicity in Loreto are vector habitat expansion from land use change, and social and ecological processes that increase human exposure. To refine and focus prevention strategies, spatially explicit risk estimates are necessary. In this study, we investigate how malaria risk varies across time and space in Loreto by modeling the relationship among climate, land use, and malaria from 2009 to 2012. We incorporate satellite-derived climate and land use variables with data on monthly malaria counts at each government health post in Loreto. Initial models indicate increased malaria risk for lagged rainfall and soil moisture as well as land areas prone to flood. These models will be compared against current forecasting methods to determine if more efficient prevention and control efforts can be implemented.

### **277. The Effects of Meteorological Factors on Mortality: Evidence from Two Health and Demographic Surveillance Sites in Bangladesh, 1983-2009**

*Nurul Alam, ICDDR, B; Wietze Lindeboom, Expert in demography; dilruba begum, Iccdr,B; Peter Kim Streatfield, Iccdr,B*

Context: Bangladesh is divided into seven distinct climatic zones. The effect of climate on mortality can be different in different zones. This study aims to assess the weather-mortality relationships in two climatic zones. Methods: Health and demographic surveillance sites (HDSS) maintained by icddr,b in Matlab and Abhoynagar in two climatic zones provided daily counts of death and population during 1983-2009. Weather data on daily temperature and rainfall and cyclones for the same period were obtained from nearby weather stations of the Bangladesh Metrological Department. Time series Poisson regression with cubic spline functions, was used allowing for over dispersion and lagged effects of weather on mortality, controlling for time trends and seasonal patterns. Analysis was carried out using R statistical software. Findings and conclusions: Both temperature and rainfall showed strong seasonal patterns, explaining a significant part of mortality in both sites. Abhoynagar with more extreme in temperature exhibited stronger cold temperature-mortality relationship than Matlab. Abhoynagar with less rainfall exhibited the rainfall-mortality association, which was not the case with Matlab. The weather-mortality relationships by age, sex and broad cause were also examined to identify vulnerable groups and areas.

### **277. Urbanization and Climate Change Hazards in Asia**

*Deborah Balk, Baruch College, City University of New York (CUNY); Mark R Montgomery, Population Council*

This paper documents the current locations of urban-dwellers in Asia of ecologically delineated zones that are expected to experience the full force of climate change: the low-elevation coastal zones, areas susceptible to inland flooding (apart from coastal sources), and the arid regions known to ecologists as drylands. Low-lying cities and towns near the coast will most probably face increased risks from storm surges and flooding; those in drylands are expected to experience increased water stress and episodes of extreme heat, as well as flash flooding. It is especially important to quantify the exposure of urban residents in low-elevation coastal zones, and to understand the likely implications for their health. While potential coastal flooding in cities has received attention, in part because the long-term implications of rising sea-levels and change coastal zones, increasing precipitation, in general, and more extreme weather events will also lead to greater flood risks to city-dwellers from in-land water sources. In this paper, flood exposures from in-land water sources are also estimated, not only because some coastal cities are also at risk of flooding from in-land waterway

### **279. Does childhood and adult socioeconomic status predict obesity in Korea: Results from the Korean National Health and Nutrition Examination Survey 2007-2009**

*Yeonjin Lee, University of Pennsylvania; Irma T Elo, University of Pennsylvania; Hyunjoon Park, University of Pennsylvania*

In this paper, we investigate associations between socioeconomic conditions in childhood and adulthood and obesity/overweight status in adulthood utilizing the Korean National Health and Nutrition Examination Survey (KNHANES) conducted in 2007–2009. Identifying factors that affect obesity/overweight status is increasingly important in Korea given the sharp rise in the prevalence of obesity/overweight during the past decades. Specifically, we assess (i) whether the inverse relationship between adult SES and obesity/overweight, which is commonly found in the United States and some European countries, is also observed in Korea; (ii) whether childhood SES is associated with obesity/overweight independent of adult SES; and (iii) whether these relationships vary by gender. The preliminary results show that there is a strong relationship between childhood SES and adult obesity among South Koreans, and adult SES attenuated this relationship in women only. We also find that men with lower childhood SES are likely to have lower risk of obesity while low childhood and low adult SES predict higher risk of obesity/overweight for women.

### **279. Life – course Socio-Economic Position and later life health related behaviour: A causal mediation approach**

*George B Ploubidis, London School of Hygiene And Tropical Medicine; Bianca De Stavola, London School of Hygiene and Tropical Medicine; Lenka Benova, London School of Hygiene And Tropical Medicine; Emily M D Grundy, University of Cambridge*

The observations that older people account for the majority of those in poor health and that the economic costs of socioeconomic inequalities in health are in the order of 9.4% of European GDP suggest that there is great potential for shifting the overall distribution of risk and improving average population health by eliminating or reducing the socioeconomic health gradient in the older age groups. In the present study we focus on the behavioural pathway that links Socio – Economic Position (SEP) and later life physical functioning in an attempt to unify the causal mechanism implied by life-course theory with a formal approach for the identification of mediating factors. We employed methods as described in the causal mediation literature and attempted to capture the potential effects of suspected unmeasured confounders by estimating a series of sensitivity analyses. Our preliminary findings show that early life SEP had a stronger

effect in smoking and physical activity in women. However the effect of later life SEP dominated differentials in the four domains of health related behaviour in both genders, whereas physical activity appears to be the major driver of socio-economic inequalities in later life physical functioning.

### **279. Lifecourse pathways to racial disparities in cognitive impairment among elderly Americans**

*Zhenmei Zhang, Michigan State University; Mark D Hayward, University of Texas at Austin; Yan-Liang Yu, Michigan State University*

Cognitive impairment and dementia are major health problems confronting older persons. Blacks are especially hard hit by cognitive impairment and dementia in the U.S. It is estimated that among those aged 71 years and older Blacks were approximately two times more likely to have dementia than Whites. Despite developments in understanding the risk factors associated with cognitive impairment and dementia in recent years, very few population-level studies have investigated the origins and mechanisms through which the racial gap in cognitive impairment is produced. In this study, using data from 7 waves of the Health and Retirement Study (1998-2010), we analyzed how racial differences in cognitive impairment are tied to the racial stratification of childhood resources and health, adult socioeconomic status, health, and health behaviors among 9044 non-Hispanic Whites and Blacks aged 65 and older in 1998. Our preliminary results showed that older Blacks were about three times more likely to suffer from cognitive impairment than Whites in 1998, and childhood conditions including childhood health, parental education, and father's occupation as well as adult socioeconomic achievement played an important role in accounting for racial disparities in cognitive impairment in later life.

### **279. The role of early- and midlife conditions for healthy aging in Europe**

*Martina Brandt, MPISOC; Christian Deindl, University of Cologne; Karsten Hank, University of Cologne*

We combined a life course perspective with a multilevel approach to analyze the impact of financial resources (both income and wealth) on self rated health over time in different countries and social systems. Therefore, we used the baseline interviews of the first two waves of the Survey of Health, Ageing and Retirement in Europe and the third wave of the English Longitudinal Study of Ageing (ELSA), and combined these data with the recently published retrospective interviews from SHARELIFE and the life histories from ELSA to take childhood conditions (socio-economic background, health) and conditions in adulthood (number of illnesses, unemployment spells) into account. Country level differences were measured in terms of income inequality (gini coefficient) in a society. To disentangle how childhood and adulthood factors as well as contextual influences affect old age health, structural equation models were used. Results show that income inequality has a small positive indirect effect on individual health, while the direct effect is negative, indicating that health status is negatively affected by the unequal distribution of resources in a society.

### **280. After the epidemiological transition: an evaluation of the mortality due to infectious and parasitic diseases in France and Italy using the multiple cause-of-death approach**

*Aline Desesquelles, Institut National d'Études Démographiques (INED); Elena Demuru, Sapienza University of Rome ; Viviana Egidi, Università di Roma - La Sapienza; Marilena Pappagallo, ISTAT; Luisa Frova, ISTAT; Michele Salvatore, ISTAT*

Infectious and parasitic diseases nowadays represent a very small share of the total mortality of developed countries which mortality profile is dominated by cancers and diseases of the circulatory system. It has been suggested that, due to old people's frailty, population aging may result in a fresh upsurge in infectious diseases. Routine indicators of cause-specific mortality are

likely to underestimate the role played by these diseases in mortality because 1) the chapter “certain infectious and parasitic diseases“ of the 10th ICD includes only part of these diseases 2) these indicators only account for the underlying cause of the death. In a previous study, we have shown that roughly 3 out of 4 mentions of an infectious/parasitic disease are not selected as the underlying cause. Multiple (both contributing and underlying) cause-of-death data have been used in order to re-evaluate mortality levels attributed to a given condition, as well as to examine what are the most frequent associations of causes involving this condition. We use this approach to analyse the mortality involving infectious/parasitic diseases of France and Italy. The analysis is performed on an extended list of the infectious and parasitic diseases.

### **280. Forty-five years of cause-specific mortality trends in Moldova**

*Olga Penina, Academy of Sciences of Moldova, Centre for Demographic Research; Jacques Vallin, Institut National d'Études Démographiques (INED)*

Over the last forty-five years, Moldova failed to progress in life expectancy at birth. Disregarding the wide fluctuations linked to the 1985 anti-alcohol campaign and the social and economic crisis of the 1990s, the general trend in life expectancy is stagnating among males and slightly improving among females. Interpreting recent mortality changes in the light of long-term trends provides an insight into the reasons of the health crisis affected Moldova like other former USSR republics from the mid-1960s. However, the periodic changes in classification of causes of death break the continuity of death time series. To assure their consistency we used a special reconstruction method (Meslé and Vallin, INED). Moreover, unlike other European countries of the former USSR, the quality of death registration in Moldova in infancy and at older ages for the 1960s and 1970s is rather questionable. The analysis of cause-specific mortality trends will be produced here after corrections for under-registration. After a long period of deterioration mixed with large fluctuations as in other former USSR countries, the recent favorable trends give hope but not yet the proof of a start of sustainable positive trajectory.

### **280. Mortality in India during 1970-2006: The role of causes of death in explaining the Female-Male mortality gap**

*Nandita Saikia, Institute of Economic Growth, New Delhi; Vladimir Canudas-Romo, University of Southern Denmark*

We assess the changing age pattern of mortality in India and bigger states by applying a mortality model during 1970-2006. Using survey data from India and a two dimensional system of model life table, we provide further evidence about changes in country and state-level patterns mortality differentials by sex and assess the potential role of major causes of death. We also study the contribution of major causes of death to the female-male mortality gap. The preliminary findings confirm that since the 1980s, health advantage of the Indian females against males has been growing. This occurred despite persisting female disadvantage below age 5. The biggest contribution to the life expectancy gap between females and males in the second half of the 1990s came from non-communicable diseases and external causes of death. We also found a notable geographical variation in sex-specific mortality patterns. While more advanced states showed female longevity advantages already in the 1970s, the laggard states displayed similar mortality levels for males and females even during the most recent periods. In order to better understand the path and timing of health transition and its determinants in India, it is necessary to consider changing sex-specific mortality patterns and their geographical diversity.

## **280. Understanding recent mortality reversal in Central Europe: case of Czech Republic and Poland**

*Marketa Pechholdova, University of Economics, Prague; Agnieszka Fihel, University of Warsaw*

The post communist transition brought along a significant decrease in mortality rates and improvement in health indicators in some Central European countries. That was the case of the Czech Republic and Poland, that witnessed sudden and systematic shift in life expectancy trends. Within two decades, from 1990 to 2009, life expectancies in both countries have increased considerably, by 5.8 years in the Czech Republic (reaching 77.3 for both sexes) and by 5.1 years in Poland (reaching 75.8). The aim of this paper is to present the most important tendencies in mortality by cause of death which allowed for this extension of life expectancies. We present a comparison to France where mortality rates remain at relatively low levels and that constitutes a good frame of reference. On the basis of the single cause-of-death time series restored for the period 1970-2009, it is possible to prove crucial importance of diseases of the circulatory system for the recent mortality developments in Czech Republic and Poland and to point at other specific health issues of the region.

## **281. Exploring ‘neo-Malthusian’ demographic rationales in migration policy-making**

*Alessio Cangiano, University of the South Pacific*

Despite widespread recognition of the potential benefits of managed migration for achieving future economic prosperity and welfare sustainability, migration policies are mostly shaped by short-term labour market objectives and electoral concerns. Nevertheless, new demographic rationales are emerging in migration policies and debates in some of the major immigrant-receiving countries. In the UK, the impact of immigration on population growth has become a ubiquitous issue in political and media debates on immigration policy. As part of the political agenda of the current conservative-led Government coalition, a range of restrictive policy changes to reduce net migration 'from hundreds of thousands to tens of thousands' have been adopted to prevent the UK population from 'hitting' 70 million within the next two decades. This paper reviews the role of these emerging 'neo-Malthusian' arguments and the key issues and challenges in setting and achieving demographic objectives – with particular reference to managing the size of the population – in migration policy-making. It challenges the notion that an 'optimum' population size should play a central role in migration policies and debates and the viability of migration policies inspired by demographic objectives.

## **281. Le niveau scolaire des populations immigrées en France : miroir des constructions administratives**

*Moguerou Laure, Université Paris Ouest Nanterre La Défense; Primon Jean-Luc, Université Nice Sophia Antipolis*

Loin de constituer un bloc homogène, la population immigrée de France affiche au contraire une forte disparité sur le plan scolaire. Les données de l'enquête Trajectoires et Origines (INED-INSEE, 2008 ) permettent de rendre compte de cette hétérogénéité de manière inédite par rapport aux sources classiques (recensements, enquêtes emploi,...) puisqu'elle autorise la mise en relation des ressources scolaires des immigrés avec les étapes de leurs histoires migratoires (période d'arrivée, modes d'admission, âge d'arrivée en France métropolitaine,...). L'objet de cette communication est de montrer que si les dynamiques des migrations s'expliquent par de nombreux facteurs, les politiques, les législations et les procédures administratives sont, pour une large part, décisives dans la configuration des trajectoires des immigrés. Elle propose ainsi une réflexion sur la manière dont les politiques migratoires nationales « construisent » les populations migrantes en France (notamment en termes de niveau scolaire).

### **281. Transnationalism and the Production of South Korean Education Migrants in Canada.**

*Marjorie Johnstone, University of Toronto; Eunjung Lee, University of Toronto*

Education migration has been increasing significantly during the last six decades. Each year since 2001, Canada has received over 130,000 students from abroad and one of the top source countries is South Korea. In the last decade there has been a significant trend of increasing numbers of younger foreign students in Canada and other English-speaking countries. South Korean transnational families mobilizing abroad for their children's education have a strong presence in various aspects of Canadian society yet few studies have been conducted to understand this phenomenon from micro to macro levels. Thus, our analysis is three-pronged. Firstly, we explore 1) how the phenomenon of education migration for minor students and accompanying mothers has been produced by home and host countries in their social policies and legislation and 2) how this new transnational family arrangement impacts the family functions and relationships in Canada and 3) how the young education migrants fare in the Canadian school system.

### **282. Freedom to Move, Barriers to Stay: An examination of rural migrants' urban transition in the Indian Capital of Delhi**

*Gayatri Singh, Brown University*

Prospects of Indian cities are greatly tied to rural migrants' ability to transition into productive urban citizens. However, their ability to do so depends not only on economic opportunities but also on the city's ability to deliver on quality of life indicators. While there is increasing work on micro-level dimensions of poverty and wellbeing in rural developing country contexts, little empirical work examines parallel dimensions in urban areas. This gap is especially pronounced in scholarly work on migrant outcomes, especially in Indian urban destinations. Within this context, I carry out an assessment of rural-urban migrants' multidimensional wellbeing in India's capital city, Delhi. The analysis uses two unique geo-referenced data sources that allow for combining socio-economic survey data with neighborhood level indicators of service provision extracted from Delhi GIS. I find that as compared to urban native dwellers, rural-urban migrants are significantly poorer across economic as well as non-economic formulations of wellbeing in Delhi. More importantly, the disadvantage arising from being a rural migrant does not disappear with an increased duration of residence in the city, implying a persistent lack of socio-economic mobility for the urbanizing individuals and important implications for urban inequality in India.

### **282. Growth Patterns of World's Cities Since 1950**

*Danan Gu, United Nations; Patrick Gerland, United Nations Population Division (Population Estimates and Projections Section); Kirill Andreev, United Nations Population Division (Population Estimates and Projections Section); Nan Li, United Nations Population Division; Thomas Spoorenberg, United Nations Population Division; Gerhard Heilig, United Nations, Population Division*

Urbanization has greatly altered the distribution of world's cities. We use the 2011 Revision of the World Urbanization Prospects, the largest time series city database with most consistent definition, to investigate growth trajectories of world's cities by major area and city size from 1950 to 2010. We found that while the number of cities has been mushrooming from all corners of the world, the greatest number of cities and the largest cities today are increasingly found in the developing world. Trends in evenness of distribution of city by country are also examined. Cities in developing countries have witnessed a faster growth in latest few decades compared to those of developed countries. Larger cities tended to have a universally greater growth rate than smaller-sized cities for six major areas and selected countries. Population of world cities is getting less evenly distributed in terms of the Pareto coefficient. Japan is a developed country with least evenly distributed population in terms of the Pareto coefficient and primacy indexes. With exception for

China and India, cities in developing countries tend to be less evenly distributed than cities in most developed countries.

### **282. Migration and Employment Situation in Mega City: A case of Greater Mumbai Metropolitan Region**

*Dharmendra Prapap Singh, Tata Institute of Social Sciences (TISS)*

Greater Mumbai is most populated mega city in India. Paper examines the migration and employment condition in the Mumbai metropolitan area using census and survey data. The study provides information on changing pattern of employment and workforce in the city during last two decades. City has observed shift from manufacturing sector to tertiary sector. The migration has always played significant role in economic development which is declining. The differences in industrial and occupational profile of workers in terms of sex, age and migration are examined. Liberalization and globalization policy of India has resulted in many changes in Indian economic scenario. Due to opening up Indian economy many industries could not cope up the competition with multinational companies. It has resulted in loss of employment in Mumbai as well as neighbouring areas. Nearly fifty per cent workers reported lack of work in enterprises, in area and closure as main reason for quitting of jobs. Another major change observed is the increase in the self employed workers as compared to regular wage and salaried jobs. Work participation rate declined by 5 percent for males while for females increased by 12 percent during 1961-2001. Economic Census (2005) indicate decline in employment in Mumbai.

### **282. The challenge of “human” sustainability for Indian mega-cities: Squatter settlements, forced evictions and resettlement & rehabilitation policies in Delhi**

*Véronique D.N. Dupont, Institut de Recherche pour le Développement (IRD)*

This paper deals with the “human” dimension of sustainability in Indian mega-cities, specially the issue of social equity approached through the housing requirements of the urban poor.

Indian mega-cities are faced with an acute shortage in adequate housing, which has resulted in the growth of illegal slums or squatter settlements. Since the 1990s, the implementation of urban renewal projects, infrastructure expansion and “beautification” drives, in line with the requirements of globalizing cities, have resulted in many slum demolitions, which increased the numbers of homeless people. Delhi exemplifies such trends.

This paper’s main objective is to appraise the adequacy of slum clearance and resettlement & rehabilitation policies implemented in Delhi in order to address the challenge of slums. Do such policies alleviate the problem of lack of decent housing for the urban poor, or to what extent do they also aggravate their situation? We combine two approaches: firstly, a statistical assessment of squatters’ relocation and slum demolition without resettlement over the last two decades, completed by an analysis of the conditions of implementation of the resettlement policy; and, secondly, a qualitative and critical analysis of the recently launched strategy of in-situ rehabilitation under public-private partnership.

### **283. The changing contours of fertility in India**

*Christophe Z Guilmoto, Institut de Recherche pour le Développement (IRD)*

India provides a formidable ground to explore the long-term dynamics of fertility change for several reasons. First, it has a unique history of early family planning with significant developments since the 1960s. Second, it has recently witnessed a rapid economic expansion likely to accelerate the pace of demographic transformations. Finally, it is a heterogeneous country characterized by a complex sociocultural and religious geography. Using original subregional fertility levels, we will reconstruct fertility change over the last five decades in the country and examine their changing spatial and demographic patterns. In addition, we will also compare India’s pace of fertility decline with trends observed elsewhere in Asia. This paper aims at

probing India's fertility trends from both internal and external perspectives in order to answer two main sets of questions: • Can we identify distinct regional trajectories and how do they relate to regional social and economic characteristics? How far have the conditions of the onset of fertility decline in each region determined its course during the following decades? • Is India's fertility transition comparatively slower than any other countries in Asia? If yes, why has it been slower in spite of India's progress in social and economic development?

### **283. Fertility Transition in Districts of India: Evidence from District Level Household and Facility Survey 2007-08**

*Aalok Ranjan Chaurasia, Shyam Institute*

This paper applies a new approach to measure and monitor fertility transition at the district level in India. Fertility transition in the districts of India has been measured on the basis of a fertility transition index that takes into consideration the two dimensions of fertility transition - the dimension of birth planning and the dimension of birth limitation. Application of FTI to the data available from the Districts Level Household and Facility Survey 2007-08 suggests that India and its most of the States, Union Territories and districts continue to be in the middle stage of fertility transition. The paper emphasises the need of reinvigorating family planning efforts in the country and suggests that the fertility transition index developed in the paper may be used for evidence-based planning and programming for family planning activities and for monitoring the implementation of these activities at district and below district level.

### **283. The changes of population fertility and the influencing factors in China based on the sixth census**

*Guangzhou Wang, Institute of Population and Labor Economics Research; Chonghui Fu, School of Humanities and Administration, GuangDong Medical College; Xuchun Zeng, ShenZhen Institute of Population and Family Planning research*

Based on the latest published data of the sixth census, this paper analyzes the fertility level, fertility pattern, and the factors influencing fertility behavior quantitatively. We discover that, under the situation of continuously decreasing of fertility level, structural factors are becoming the crucial ones which will determine the future development of fertility level. In the aspect of fertility pattern, the interval between first marriage and first childbearing is enlarging, and the parity is becoming lower. Although the age-specific marital fertility rate has resulted in the increase of general fertility rate by 9.613%, the age structure and marital status are more and more important among factors which result in the decreasing of fertility level. The findings are in favor of understanding Chinese population situation correctly, and planning and regulating population policies scientifically.

### **283. Regional analysis of one child family ideation and reality in India as a possible determinant of future fertility trends**

*Stuart Basten, University Of Oxford; Mamta Rajbhar, Iips, Mumbai*

Numerous states in India now exhibit sub-replacement fertility. In consequence, as elsewhere in East Asia, one-child-families must be in evidence in India. Very little work has been done so far on identifying and examining one child families in India (cf Basu and Desai 2010). In this paper, we examine data regarding planned fertility and fertility ideals in the National Family Health Survey [NFHS-III], 2005-06. We found that only about 3% of families are one child families, and that two-thirds of these one child families are one son families. However, a large proportion of never married women and men who are mostly below age 30 desire small families with only one child. Indeed, one in every six never married women and one in every seven never married men report a preference for a one child family, with most of not particular about sex of the child. We found a high correlation between ideal family size of one and one child family outcomes, which

implies that once these surveyed never married women/men marry and enter the reproductive span, we may find a sizeable increase in the number of one child families. We suggest this could be a useful input into forecasting fertility in Indian states.

#### **284. Effects of the 2010 Droughts and Floods on Community Welfare in Rural Thailand: Differential Effects of Village Educational Attainment**

*Alessandra Garbero, International Institute for Applied Systems Analysis (IIASA); Raya Muttarak, Wittgenstein Centre (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences*

Climatic events can have disastrous consequences on rural livelihoods where economic activities mainly rely on agriculture and natural resources. The impacts of the natural disasters however are not distributed evenly. They vary considerably with demographic and socio-economic characteristics of a given area. Based on the Thai government surveys of living conditions and life quality for the years 2009 and 2011 of 68,695 villages, this paper aims to assess the impacts of natural disasters on community welfare and investigate the role of education as a buffer to livelihood and climate shocks. This study use five items as an indicator of welfare, namely, food expenditure, non-food expenditure, productive expenditure on agriculture, expenditure on education and income. Although we find that rural communities are able to smooth consumption such that droughts and floods do not produce a negative effect on food and non-food expenditure nor spending on agriculture and education, there is significant variation in consumption smoothing by community's educational attainment level. Communities with higher proportion of members with at least secondary education enjoy the increase in income and consequently consumption. This finding shed light on positive externalities of education in overcoming hardship during weather shocks.

#### **284. Human Capital and Water: Assessing the Direct Relationship and the Impact of Urbanization in LDCs and non-LDCs.**

*Sylvia Szabo, University of Southampton*

This research investigates the household level relationship between human capital and access to safe water and examines how different degrees of urbanisation affect this association. Previous evidence showed that education has a positive impact on health outcomes; however little attention has been paid to understanding the role of human capital on households' access to safe drinking water particularly in the context of urbanization. Multilevel regression analysis is carried out using household level data from 35 Demographic and Health Surveys (DHS) to examine the association between human capital and access to safe drinking water, adjusting for relevant predictors including contextual/structural variables. The main predictors include household human capital measured in terms of weighted average of years of schooling of the household members in working ages (18-65), and indicators that represent household conditions. The results confirm significant positive influence of human capital on access to safe water with differential effect of urban residence. While overall urban residence and macro-level urban growth have a positive effect on this association, the study finds that the impact of these indicators varies depending on the countries' level of development.

#### **284. Terra Populus: Integrated Data on Population and Environment**

*Steven Ruggles, University of Minnesota; Catherine A Fitch, University of Minnesota; Tracy Kugler, Univeristy of Minnesota; Jonathan Foley, University of Minnesota; Steven Manson, University of Minnesota; Matthew Sobek, University of Minnesota; Peter D Clark, University of Minnesota; David Van Riper, University of Minnesota*

The goal of Terra Populus (TerraPop) is to lower barriers to conducting interdisciplinary human-environment interactions research by making data with different formats from different scientific

domains easily interoperable. TerraPop is developing organizational and technical infrastructure to integrate, preserve, and disseminate data describing population and environment over time. TerraPop will incorporate large international microdata and aggregate census datasets, along with land use, land cover, climate, and other environmental datasets. Currently, these data exist in a variety of data structures, have generally inadequate metadata, and have incompatible geographic identifiers. TerraPop is developing methods of integrating data from different domains and data structures based on spatio-temporal linkages among data contents. The new infrastructure will enable researchers to merge data from heterogeneous sources to study relationships between human behavior and the natural world. TerraPop will partner with data archives, data producers, and data users to create a sustainable international organization that will guarantee preservation and access over multiple decades. A beta version of the TerraPop data access system will be available in spring 2013, and initial public release is planned by the end of 2013.

### **285. Female Genital Mutilation and its effects over Women's Health**

*Enu Anand, International Institute for Population Sciences (IIPS); Jayakant Singh, International Institute for Population Sciences (IIPS)*

Female Genital Mutilation (FGM) is partial or total removal of the external female genitalia or other injury to the female genital organs whether for cultural or other non-therapeutic reasons (WHO). More than 100 million women and girls are estimated to have had FGM worldwide, mostly from the African continent. Every year around 2 million girls are at risk of mutilation. FGM being an inhuman practice, it is also a violation of child rights. FGM can result into short and long term complications in the women like pain, hemorrhage, urine retention, infection, shock, infertility, menstrual difficulties, problem in pregnancy and childbirth and pelvic infections. Thus this paper attempts to study the differences in the obstetric outcomes and women's health among cut and uncut women in Kenya. Some of the key findings indicate that Women with FGM are significantly more likely than those without FGM to have adverse obstetric outcomes. Discriminant analysis have been carried out to examine the within group and between group discriminants.

### **285. Mother to daughter transmission of Female Genital Mutilation among African immigrants in Italy**

*Patrizia Farina, University Milan Bicocca; Livia Elisa Ortensi, Università degli studi di Milano - Bicocca*

The feminization of African international migration flows led to an increased presence of women with female genital mutilation (FGM). In Italy as well as other countries the increasing need to have more detailed information on this practice among immigrants led researchers to gather primary data in order to investigate topics such as prevalence in emigration, most diffused types of excision, health consequences, related socio-economic factors and attitudes on circumcision of second generation girls. According to this approach the contribute presented here has the aim to assess the determinants of mother-to-daughter transmission of FGM among African immigrants living in Italy by means of a survey including an ad-hoc module. Main results using multilevel analysis techniques indicate that once other factors (including family and community effects) are held constant, covariates like mother education and experience of FGM, family support for FGM, daughters' year of birth and being born in emigration are strongly associated with the process of mother to daughter transmission of FGM. Strong differences are also observed across communities.

### **285. Religion and practice of excision in Côte d'Ivoire**

*Joel Nguéabou Nguemo, Ministry of Economy, planning and regional development; Glebelho Lazare Sika, ENSEA*

Female circumcision is a practice which dated as far back as ancient Egypt and which is still rampant nowadays. The reasons given to justify this are numerous. The preservation of the virginity of the woman until marriage and the respect of the religions and customs of peoples are some of the reasons which make this practice common. This study has allowed us to highlight two key factors in the practice of female circumcision. These are religion and ethnicity. These two factors are also correlated. The Muslim religion has emerged as one in which the proportion of circumcised women is the highest which is not the case among Christians and animists. In the Southern Mande ethnic group, female circumcision is very common. These people are also very much in favor of female circumcision. On the other hand, the Akan people who are predominantly Christian are less likely to circumcise their daughters and have a low prevalence of circumcised females. Although there is a link between religion and the practice of circumcision, the search for reasons to justify this practice has proven otherwise. Thus, circumcision is not tied to religion, but rather to traditions that persist within different ethnic groups.

### **285. Towards a better estimation of the prevalence of FGM in the European Union**

*Els MM Leye, International Centre for Reproductive Health, Ghent University*

About 140 million girls and women worldwide are currently living with the consequences of FGM. Prevalence among migrant communities is unknown, including in the European Union (EU). In the EU, there are no on-going, systematic, representative surveys that use a harmonised approach to gather data on FGM prevalence. Attempts to measure the magnitude of FGM in EU countries have been undertaken in a number of countries by a variety of actors and using various methodologies, including FGM prevalence estimation studies, surveys among health professionals, surveys among other professionals, surveys among practising communities, surveys among asylum seekers, compilation of data on registered births in families originating from FGM risk countries and data collection on the numbers of women from FGM risk countries. This presentation will discuss existing prevalence studies in the EU, as well as other methods to describe the magnitude of FGM in the EU, including their limitations. A possible approach for estimating the total FGM prevalence in the EU will be proposed.

### **286. Colombian Armed Conflict and its Effects on Fertility Agendas, 2000 – 2010**

*Beatriz Piedad Urdinola, Universidad Nacional de Colombia; Andrés Felipe Castro Torres, Departamento Nacional de Planeación*

The lack of reliable data on political conflict and the difficulties of properly measure fertility decisions under social and economic disruption make of the estimation of effects of conflict over fertility one of the most difficult questions within the Demography of Conflict. We propose a methodology that can be implemented for countries under conflict with access to Demographic and Health Surveys, combined with a good proxy for political violence, by applying multiple generalized equations. We present the results for the Colombian case that combines the retrospective information from DHS 2005 and 2010, homicides by age and sex and population counts per municipality from DANE (the official statistical office for Colombia) and records of outlaw and army/police initiated armed actions collected by Humans Rights Observatory of Presidency of Colombia (HROPC). As a result we found that there are differential effects by residence (rural vs. urban) and over time, as the conflict has reduced its intensity in the decade under study, and more importantly opposite direction on the effects whether the violence was caused by an intervention by outlaw armed groups or official groups.

## **286. Sexual and reproductive health and rights and population: an analysis of achievements, gaps and challenges**

*Gita Sen, Indian Institute of Management, Bangalore; Development Alternatives with Women for a New Era (DAWN); Rajat Khosla, Amnesty International*

The ICPD Programme of Action is responsible for a fundamental change in the views and perceptions of policymakers around the world on how population policies and programmes should be formulated and implemented. The POA moved the debate away from a narrow focus on demographic targets and family planning methods towards a more comprehensive approach to sexual and reproductive health. For the first time, member states of the UN recognized reproductive rights as human rights and declared that the principles of gender equality, equity and women's empowerment were crucial to effective population and development strategies. In the years since the Programme of Action was adopted, some important steps have been taken to realize the commitments it set out. However, it is painfully clear that progress has been uneven and slow. Despite the change of emphasis and perspective set out at the Cairo ICPD, ministries of health, UN agencies and others have persisted in promoting and implementing narrow, top-down interventions and have ignored commitments to gender equality and equity.

This paper sets out the link between population and human rights and examines how the Cairo Programme of Action, if effectively implemented, would contribute both to the realization of human rights and to better development and population indicators.

## **286. Solving the Low Fertility Rate with Technology?: Population Policy and Woman's Right to Health**

*Jung-Ok Ha, Institute for Gender Research*

South Korea's total fertility rate (TFR) in 2009 was 1.15, the lowest in the world (as known so far). The South Korean government has invested a total of 19.7 trillion won (US\$ 18 billion) of public funds from 2006 to 2010 to deal with the problem. This paper aims to analyze the "National Supporting Program for Infertility Couples" (hereinafter the "Program"), started in 2006 as one of the measures taken by the South Korean government to deal with low fertility in Korea. Specifically, this study is to clarify the following research questions: First, did the "Program" start with a comprehensive consideration for women's health? Or rather, has the "Program" caused the concept of women's health to change or deteriorate? Second, can the "Program" be an effective measure to deal with low fertility? And does this "Program" not cause internal contradictions with other low fertility policies? Third, does the "Program" live up to its name and actually really help infertile couples? This study attempts to answer these questions by analyzing the documents published by government regarding the "Program" and low fertility. In addition, it will analyze how national policy deals with women's health in conjunction with the amendments of the "Maternal and Child Health Act", and previous analysis on the "Maternal and Child Health Service".

## **287. Economic Growth and Women's Labour Force Participation in Indian States**

*Rahul Lahoti, Indian Institute of Management (IIM); Hema Swaminathan, Indian Institute of Management, Bangalore*

Several cross-country and within-country studies have hypothesized that a U-shaped relationship exists between women's economic activity and economic development. Female labour force participation tends to decline initially with economic development, plateaus at a certain stage of development before rising again. This is argued to be mainly a result of structural shifts in the economy, changing influence of income and substitution effects, and an increase in education levels of women in the population. In this paper we test this U-shaped hypothesis for India using state-level employment data spanning the last twenty five years, 1983-84 and 2009-10. We find no

evidence to support the U hypothesis in the Indian context. This finding is especially relevant as researchers attempt to explain the systematic decline in female labour force participation.

### **287. Gender roles in family and earnings differences in Brazil**

*Simone Wajzman, Centro de Desenvolvimento e Planejamento Regional (CEDEPLAR)*

The gender gap in earnings in the Brazilian labor market have been declining steadily for 40 years, but there is a remaining difference which is usually associated with discrimination against women. This paper examines the extent to which familiar characteristics of women and men explain the documented gender gap in earnings in Brazil. The hypothesis is that overcommitment of women with paid work and housework is the fundamental constraint for equity in earnings. I found no maternity or marriage penalty for women. On the other hand, there is a substantial penalty for household work for both men and women, but it is considerably more severe among women, not only because they do four times more hours of housework than men, but also because the negative effect over female earnings is larger. I added the familiar characteristics and the mean number of weekly hours of housework to the conventional model of decomposition of the difference in earnings and it increased the explained component of the difference between women and men.

### **287. Occupational outcomes of internal migration: The importance of gender and migration roles.**

*Sergi Vidal, Universität Bremen; Francisco Perales, The University of Queensland*

In this article we explore men's and women's occupational outcomes after internal migration using panel data from Britain. Our theoretical framework combines traditional individual and household migration decision models with an innovative structural approach. This highlights the role within migration processes of the systematic separation of men and women across occupations with diverging characteristics and career prospects. We add to existing literature by focusing explicitly on individuals' post-migration occupational characteristics and sex-composition, and thus depart from the traditional (restrictive) focus on wages and employment status. Two types of migration-related occupational outcomes are of particular interest: (i) between-individual differences on post-migration occupational characteristics, and (ii) within-individual differences in pre- and post-migration occupational characteristics. Sex differences on the processes that lead to migration related occupational outcomes are explored as well as those which arise from migration roles in family moves, a pervasive structural factor on gendered migration outcomes. The empirical analysis consists of panel regression models estimated using individual-level data from the British Household Panel Survey combined with occupational-level data from the UK Labour Force Survey.

### **287. Gender differences in adolescents' work and family orientations in the United States**

*Sarah Hayford, Arizona State University; Jessica Halliday Hardie, University of Missouri-Kansas City*

In the United States, women's labor force participation increased dramatically over the second half of the twentieth century. Yet women's occupational attainment and earnings lag behind men's, in part because of continued inequality in family responsibilities. This paper uses nationally representative data on secondary school students from the Education Longitudinal Study: 2002 to examine whether gender differences in adult work-family configurations have antecedents in adolescents' goals for work and family achievement. We will compare the value placed on work and family achievement by high school girls and boys. Preliminary results show high ambitions for both work and family goals among both boys and girls. Although girls are more likely to report that marriage and family relationships are very important to them, differences are relatively small, and girls are also more likely to value success at work and getting a good job. The completed

paper will use latent class analysis to assess the joint associations between work and family goals and test whether preferred combinations differ by gender.

### **288. Determinants of childlessness among men and women in Italy: does socio-economic status act in a different way?**

*Maria Letizia Tanturri, University of Padua*

This paper investigates the determinants of childlessness among men and women in later adult life in Italy, using data on a sub sample of 30-49 years old men (7,254) from the Multipurpose Italian survey, Family and Social Actors (2003). A weighted multinomial logit model is used to contrast “voluntary childless men (or women)” with other categories: the “un-voluntary childless” and fathers (or mothers). Covariates include background and early life course characteristics; family formation variables; work related features, attitudes and values. Results seem to corroborate the hypothesis that voluntary childlessness is a common behaviour among men and women, but its determinants partly differ, with particular regard to socio-economic status. In particular voluntary childlessness among men seems linked mainly to poor education, poor health and worse social status. Conversely among women the opposite is true: those with a university degree and a managerial position are more likely to be voluntary childless. Therefore, voluntary childlessness could spread in a different way across social classes. Family disruption or celibacy are common cause for not having and not willing to have children for both men and women, as well as secularisation and anti-traditionalist attitudes and the residence in the North of Italy.

### **288. Family and Socioeconomic Predictors of Childlessness for Women in High Income Countries: a multilevel analysis**

*Susan Barris Schaffnit, London School of Hygiene and Tropical Medicine (LSHTM); Rebecca Sear, London School of Hygiene And Tropical Medicine*

Studies of women’s childlessness have shown strong associations with socioeconomic status (SES) indicators, particularly education. In addition to socioeconomic considerations, families are known to influence women’s fertility outcomes throughout the world through various mechanisms: childcare provision, financial transfers, emotional closeness, and proximity. This research tests the hypothesis that the effect of kin proximity, measured by living with one’s parents into adulthood, on women’s probability of remaining childless will vary depending upon SES environment. We find that while living with one’s parents in adulthood positively relates to being childless, this association is stronger for low-wealth women than high-wealth women controlling for education, partnership, and other factors known to affect fertility. It is suggested that the effects of proximity to family on women’s fertility may vary by wealth due to the effects of resource stress or abundance. Either way, these results suggest clearly that the associations between family indicators and women’s fertility are flexible with SES environments.

### **288. Forecasting Cohort Childlessness: Bayesian Modeling Based on Historical Patterns in the Human Fertility Database**

*Carl Schmertmann, Florida State University; Emilio Zagheni, Queens College, City University of New York (CUNY); Joshua Goldstein, Max Planck Institute for Demographic Research*

We propose a new Bayesian approach to forecasting cohort childlessness. Combining historical and contemporary data from the Human Fertility Database (HFD), we estimate a posterior distribution for the Lexis surface of age-specific first-birth rates for US cohorts born 1950-1992. Past rates on this surface are known with high precision from the HFD, while future rates must be forecast. Our approach combines estimation of past and future rates in a single model, using historical HFD data to build priors and thus identify likely (and unlikely) age and time patterns across Lexis surfaces. The resulting forecast of first-birth rates and cohort childlessness automatically includes uncertainty estimates. Among many other results, our forecast indicates that

US childlessness, which is currently falling slightly, will reach a minimum for women born in the 1970s, and will almost certainly be higher for those born in the 1980s.

### **288. Level, Trend and Pattern of Childlessness in Iran**

*Hajjeh Bibi Razeghi Nasrabad, Population Studies and Research Center of Asia and the Pacific, Tehran, Iran.; Mohammad Jalal Abbasi-Shavazi, University of Tehran and Australian National University; Meimanat Hossein Chavoshi, Australian National University; mohammad reza karegar shooraki, ministry of cooperatives, labour and social welfare*

This paper, using data from the 2000 Iran Demographic and Health Survey (IDHS) and 1991-2003 survey of Socio-Economic Characteristics of Household in Iran (SECHI) estimate childlessness trends through time and principal measures of childlessness in Iran. Using SECHI data, we found childlessness in five-year age-groups between ages 15 and 39 increased during 1991-2003. In contracts, the proportion of Childlessness in the last years of the reproductive lives has reduced from 3.8% to 2.2%. This pattern was repeated within 5 years of marriage. It seems that to rise in percent of women who do not have children can be related to the postponement of first birth. Reduction in life time childlessness reflects more access to the assisted reproductive technologies in Iran. In addition, Using IDHS we distinguish between voluntary and involuntary childlessness. Among ever-married women aged 15-49 voluntary and involuntary childlessness is 8.5 and 2 percent respectively. The provincial estimates show that most of provinces are considered to have a low level of socio- economic development, displayed the highest involuntary childlessness as compared with all other province. Key words: childlessness, voluntary, Involuntary, infertility, Iran.

### **289. Do young women in India prepared to deal with SRH issues? : A case study of Jharkhand, India**

*Sushanta Banerjee, Ipas; Janardan Warvadekar, Ipas-India; Kathryn L Andersen, Ipas NC; Paramita Aich, Ipas*

Background: Young women often face social, economic, logistical, policy and health system barriers to access to sexual and reproductive health services, including safe abortion care. Method: An OR project is launched in Jharkhand to assess the strategy of using youth leaders to link young women to SRH issues including safe abortion services. Using quasi-experimental longitudinal design a baseline household survey is conducted in July-August 2012 and interviewed 1381 young women (15-24 years) to assess the knowledge, attitude, and skills on SRH issues and barriers and forces of influence that lead to any particular behavior, decision, or service utilization. Results: Even with high levels of literacy (66%-91%) and mass media exposures (65%-80%), the composite knowledge score on SRH (2.4 of 6), contraception (2.4 of 8), and abortion (0.5 of 8) related issues were significantly low. Multivariate analyses revealed age, education, family composition, living standard, and exposure to mass media as the influencing attributes of knowledge level. Around 4% of married young women reported experiencing induced abortion; one-third of them had no role in taking decision. 92% of them had approached private and illegal providers. Findings of this study had major policy implication for guiding the youth focused intervention strategy.

### **289. Factors associated with contraceptive use behavior among adolescents in two informal settlements in Nairobi, Kenya**

*Joyce N Mumah, African Population and Health Research Center (APHRC); Donatien Beguy, African Population and Health Research Center (APHRC); Michael M. Mutua, African Population and Health Research Center (APHRC); Salome Wawire, Independent Consultant*

Understanding sexual and reproductive health of adolescents is of utmost importance and carries with it implications for improving individual health outcomes especially reduction in unintended

pregnancies and STIs such as HIV/AIDS. Using data from poor urban youths in the slums Nairobi, we try in this paper to comprehensively look at the individual level factors that may influence contraceptive use and pregnancy outcomes among adolescents as they transition to adulthood, in a bid to understand the needs and challenges that they face. Preliminary results point to the fact that there is a diversity of experiences among adolescents with regards to knowledge, attitude and behavior. Age, education and marital status were often strongly associated with SRH experiences of adolescents, pointing to fact that targeted programs are needed to reach them with range of SRH info and services at different stages – before they initiate sex, as sexually active unmarried youth, or as married individuals and couples.

### **289. Perceived Facilitators and Barriers to Interventions Aimed at Reducing Unintended Pregnancies among Adolescents in Low and Middle Income (Developing) Countries- A Systematic Review**

*Yeetey Akpe Enuameh, Drexel University; Sarahlouse White, Joanna Briggs Institute (JBI), Adelaide, Australia; George Adjei, Kintampo Health Research Centre; Livesy Abokyi, Kintampo Health Research Centre; Seth Owusu-Agyei, Kintampo Health Research Centre; Alan Pearson, Joanna Briggs Institute (JBI), Adelaide, Australia*

Adolescent pregnancies are most often the result of sexual risk taking. Adolescent birth rates in low and middle income countries lag behind those of higher income countries. The review's objective was to present the best available evidence on facilitators and barriers to programs targeting a reduction in pregnancies among adolescents in low and middle income countries. Qualitative studies focused on interventions to persons aged 10 to 19 years residing in low and middle income countries of the world and factors that could influence those interventions were considered. The review identified 8 perceived barriers and 3 perceived facilitators from 11 synthesized findings. Some perceived barriers were inadequate adult/parental support, negative perceptions about contraception, sex as a resource, lack of open sexual discourse, subordination of females to males and non-friendly institutions. Perceived facilitators were supportive institutions, families and parents, and adolescents' determination not to be pregnant early in life. A friendly approach to care, societal support and open discourse on sexual issues could facilitate a reduction of unintended pregnancies. Further research of myths against contraception use, cultural norms encouraging female subordination among others could guide pregnancy prevention programs.

### **289. Youth Friendly Services? Using simulated clients to evaluate sexual health services in urban South Africa**

*Rebecca S. Geary, London School of Hygiene And Tropical Medicine; Lynda Clarke, London School of Hygiene And Tropical Medicine; Emily Webb, London School of Hygiene And Tropical Medicine; Shane Norris, University of the Witwatersrand*

Few studies have evaluated whether youth-friendly health services improve young people's experiences of using services, and none in South Africa have done so since the Department of Health took over management of the Youth Friendly Services program. This study investigated whether clinics providing Youth Friendly Services in Soweto, South Africa delivered a more positive experience to young people requesting advice on condom reliability or contraceptive methods than those not providing this program, using a simulated client method. 15 randomly selected primary healthcare clinics each received 3-4 simulated client visits. After each visit semi-structured debrief interviews were conducted with simulated clients. Multi-level linear regression was used to investigate associations between Youth Friendly Services provision and visit outcomes. Framework analysis of qualitative data was conducted. There was no evidence that clinics providing Youth Friendly Services delivered a more positive experience (difference in mean clinic visit score -0.18, 95% CI: -0.95, 0.60,  $p=0.656$ ) than those not providing this program. More positive experiences were categorised by positive healthcare worker behaviour and less

positive experiences by unnecessary protocols, negative attitudes to information seeking and lack of information or of privacy.

### **290. Coping with Family and Work Responsibilities in the Context of Rapid Urbanisation: Strategies of Mothers in Accra, Ghana**

*Philippa J Waterhouse, University of Southampton*

The process of urbanization in sub-Saharan Africa has had gendered consequences as economic, socio-cultural and environmental transformations have resulted in the greater intensification of women's burdens compared to men's. In such shifting contexts the combination of maternal productive and reproductive roles may be increasingly difficult which raises the question of how mothers cope with their multiple responsibilities. This research develops a greater understanding of the coping strategies adopted by mothers of young children in Accra, Ghana through the use of mixed methods. Qualitative data was analyzed according to Hall's (1972) typology of coping mechanisms. Whilst a diversity of coping strategies was found to be employed by mothers, the majority of these were of a structural role redefinition approach. Of primary importance was the childcare strategy utilized. In order to quantitatively investigate variation in the adoption of this coping strategy multinomial regression was performed on data from the Accra Urban Food and Nutritional Security Survey. This study found that mothers are active agents involved in the shaping of the expectations of their work and family roles. In particular the implementation of coping strategies, which vary by the age of their children allows them to reduce vulnerability.

### **290. Employment without childcare: How do parents do it?**

*Jennifer Anne Baxter, Australian Institute of Family Studies; Matthew Gray, Australian National University*

One of the significant changes in OECD countries in recent decades has been a substantial increase in maternal employment. While many children attend formal or informal childcare while mothers work, a substantial proportion of children in dual employed families are cared for only by their parents. This paper uses two Australian studies to explore how families manage dual employment without the use of non-parental childcare, with a focus on working arrangements used by mothers and fathers. The 2011 Australian Bureau of Statistics Child Care survey is used to examine job characteristics and childcare in a national sample of children aged up to 11 years. The Longitudinal Study of Australian Children is also used to look at work arrangements used when children are very young. Mothers were asked to report on the main jobs they and their partner had after the birth of their child, and what working arrangements each had used to care for their child. Open-ended responses from this survey are used to illustrate some of the findings on how work is managed without non-parental care. The findings highlight gendered patterns, but with certain job characteristics, especially working from home, related to the avoidance of non-parental care.

### **290. Entre activité professionnelle et famille : la double vie de femme à Cotonou (Bénin)**

*Agnès Adjamagbo, Institut de Recherche pour le Développement (IRD); Bénédicte Gastineau, Ird; Josette Gnele, Centre de Formation et de Recherche en matière de Population (CEFORP)/ IRD; Saturnine Michozounnou, Centre de formation et de Recherche en Population ( CEFORP)*

Avec l'arrivée massive des femmes sur le marché de l'emploi et l'apparition de nouvelles structures familiales (familles monoparentales, familles recomposées), la question de la conciliation famille-travail est devenue un enjeu autant personnel, professionnel, économique que politique. Cette préoccupation concerne encore majoritairement les femmes et en particulier les femmes résidant à Cotonou qui sont tenues de répondre aux exigences organisationnelles en même temps que satisfaire des dépendances familiales et sociales, choses qui s'avèrent de plus en plus contradictoires. La garde des enfants et autres responsabilités familiales restent pour elles un véritable défi.

**290. Time alone or time together? The impact of family life cycle and education on couples' time use in Sweden (1990-2010).**

*Jeff Neilson, Centre for Economic Demography, Lund University; Maria Stanfors, Centre for Economic Demography/Dept of Economic History, Lund University*

We investigate how partnered individuals spend their time, comparing the allocations spent alone, as a couple or together with children as a family, focusing on family life cycle, work status and education as primary determinants of time use. The analyses use data from the Swedish Time Use Surveys (1990/1991, 2000/2001, and 2010/2011) covering over 5,500 partnered individuals aged 20-55. Multivariate techniques are used to address: how the family life cycle affects who individuals spend their time with; the impact of education on the time couples spend together; whether these relationships have changed in recent decades. Results suggest that parents spend less time together as a couple than non-parents, but when we factor in family time, one-child parents spend similar quantities of time together as non-parents. Having two children impacts partner time negatively, but there seems little difference between having 2 or 3+ children concerning time with one's partner or as a family, indicating returns to scale or some kind of specialization among parents with more than two children. Education is not a strong determinant of how much time couples spend together, but educational gradients exist in activities performed. Over time, we uncover a shift towards more family togetherness at the expense of time alone with one's partner.

**291. Demographic Dynamics, Livelihoods and Land Use: a Twenty Five Years Longitudinal Study for the Brazilian Amazon**

*Alisson F Barbieri, Universidade Federal de Minas Gerais (UFMG); Gilvan Guedes, Universidade Federal de Minas Gerais & Indiana University; Mariangela Furlan Antigo, Universidade Federal de Minas Gerais (UFMG)*

We examine how land use and livelihoods over time in the Brazilian Amazon is explained by households' demographic composition and sources of income and welfare, and stages of frontier development. We build on the "household and land use life cycle" and the "household livelihoods" theories to relate land use and land cover change to the many components of colonists' decision-making, individual aspirations of income and welfare and collective needs of familiar group(s) in rural settings, and how they are mediated by the context in which these decisions are made. We use a unique panel of plots and households based on field surveys carried out in the municipality of Machadinho in 1985 (288 farm households), 1986 (552 farm households), 1987 (808 farm households), 1995 (1,079 farm households), and 2010 (a sample of 259 farm households). In order to understand livelihoods dynamics we estimate cross-section and panel latent class models (Grade of Membership), this last to estimate conditional transitional probabilities from one livelihoods to others over time. We finally discuss how changing livelihood options are impacted and have consequences depending on the scale of analysis and their challenges for public policies regarding sustainable livelihoods, development and land use in the Amazon.

**291. The effects of population and land cover change on food security in Latin America from 1961 -2011**

*David Lopez-Carr, University Of California, Santa Barbara, Department Of Geogrpahy; Daniel Ervin, University Of California, Santa Barbara, Department Of Geogrpahy; Anna Carla Lopez, San Diego State University*

Unprecedented population growth attended equally unprecedented land use and land cover changes in Latin America during the second half of the twentieth century, affecting the food security of thousands of agriculturally based communities. The more than doubling of the population of Latin America was accompanied by rural migration to urban areas, and extensification of agricultural land at the expense of forest and natural environments (Carr, Lopez, and Bilsborrow 2009). As population growth continues and the most suitable potential agricultural

land diminishes, has intensification followed on the heels of extensification and, if so, has production risen concomitantly? We use data from the Food and Agriculture Organization of the United Nations' (FAO) to examine trends in population, agricultural intensification and food production Latin America from 1961-2011. Results indicate rising population (with slowing growth rates) accompanied by soaring intensification in the form of increased fertilizer and mechanization. However, there is no linear relationship between agricultural input and output. Rather, the results point to a Malthusian pattern: inputs increasing exponentially, while outputs increase at best arithmetically.

### **291. Understanding energy consumption in Mexico: an age-period-cohort analysis**

*Landy L Sanchez, El Colegio De Mexico*

Household energy consumption has increased in Mexican urban areas over the last 20 years. Explanations point, on the one hand, to changes on household wealth and, on the other hand, to life style transformations towards more energy intense everyday practices. We argue that disentangle these effects requires a cohort-period analysis since it is necessary to separate increments on income at older ages from those increases related to country wealth (period) and generational differences in consumption patterns. To examine these effects, we pooled multiple years of the Income and Expenditure Household Surveys (1992-2008), and we build synthetic cohorts to implement a hierarchical age-period-cohort analysis (HAPC) of household energy consumption in urban Mexico. After documenting the presence of cohort differences in energy consumption (Sanchez y Jasso 2012), this paper examines a) if changes Mexico's economic wealth impacts household energy consumption, and b) whether such adjustment differs across cohorts.

### **291. Urbanization, food consumption patterns and population growth: challenges for the use of natural resources in México and Brazil**

*Bárbara A Willaarts, Universidad Politécnica de Madrid; Ignacio Pardo, Programa de Población, FCS, Universidad de la República (Uruguay); Gabriela de la Mora, Instituto de Investigaciones Sociales, Universidad Autónoma de Nuevo León.*

The main goal of this paper is to discuss the relationship between population growth, rising living standards, food consumption patterns, urbanization and the trends in the use of water in the two most populous countries in Latin America: Brazil and Mexico. Although it only comprises 8% of the global population, Latin America constitutes an ideal case to observe population changes, with 79.1% of the population is living in cities (UN, 2011). Cities in this continent show a rate of expansion surpassing the rate of population growth; and the trend is projected to continue in the coming decades, which will increase competition for land, water and other natural resources. Besides, significant changes in consumption patterns have been observed over the last decades, along with the growth of the middle class in many countries across the region. By 2050 population growth and the increasing living standards in much of the world will contribute to increasing food demand by 70%. Latin American countries are most likely going to play a vital role in food production and need to assess important natural resources trade-offs.

### **292. Missing women in the Italian middle ages? Data and interpretation**

*Maria Castiglioni, University of Padova; Gianpiero Dalla Zuanna, University of Padova; Irene Barbiera, University of Padova*

A recent study focusing on Italian Early and Late Middle Ages using archaeological data shows that the ratio between male and female individuals aged 20+ was clearly disproportionate in favour of the former (169 men per 100 women). Such unbalanced sex ratio is not observed neither in Italian cemeteries during Roman times or Late Antiquity nor in medieval necropolises of France, Hungary and Germany. The first aim of this paper is to demonstrate that this disproportionate sex ratio mirrors a higher infant and youth female mortality in the Italian Middle Ages, rather than

statistical artefacts or selection problems concerning data on the necropolises compared those on the general population. The second aim is to disentangle the causes of such peculiarities. The (albeit scarce) written sources support the idea that the transition from Roman to medieval times in Italy was characterized by a weakening of the *pater familias* and – more generally – the family of origin's control over women (throughout their lives), in part due to a widespread affirmation of exogamous marriage. This shift may have been particularly drastic in Italy – the heart of the Roman familial system – compared to Central-Eastern Europe.

### **292. Présentation et mise en œuvre d'une nouvelle approche de l'âge à partir d'indicateurs biologiques (procédure d'inférence bayésienne)**

*Luc Buchet, CNRS/INED; Henri Caussinus, Université Paul Sabatier; Daniel Courgeau, Institut National d'Études Démographiques (INED)*

Les paléodémographes avaient mis en place différentes méthodes, tant paramétriques que non-paramétriques, pour estimer la structure par âge d'une population dont on ne dispose que d'indicateurs biologiques. Ces méthodes vont utiliser une population de référence, dont les âges et les indicateurs biologiques sont connus, et se baser sur diverses hypothèses. Elles posent un certain nombre de problèmes, tant dans les hypothèses à leur base que dans les estimations qu'elles fournissent, qui sont discutés. Nous présentons ici une nouvelle méthode pleinement bayésienne, qui considère comme aléatoires aussi bien les fréquences observées dans la population de référence que dans le site archéologique étudié, sous l'hypothèse d'uniformité biologique entre les deux populations. Les principes de cette méthode sont succinctement présentés et contrastés avec ceux des méthodes antérieures. Cette méthode sera ensuite appliquée, avec une population de référence bien documentée, à l'étude paléodémographique de la nécropole antique et médiévale de Frénouville (France). Il en ressort qu'il est possible de conclure avec une précision quantifiable, en dépit des faibles effectifs observés, à une distribution des décès très proche, à l'époque gallo-romaine, de celle du standard préindustriel, et à une mortalité plus sévère à l'époque mérovingienne.

### **292. Quelle fiabilité accorder aux déclarations sur les âges en Afrique ? Les enseignements d'un appariement de recensements au Mali.**

*Assa Gakou Doumbia, Instat Mali; Véronique Hertrich, Institut National d'Études Démographiques (INED)*

L'estimation des âges et des dates reste un problème important en Afrique subsaharienne, en termes de collecte comme d'analyse. Dans des populations où ces notions sont peu utilisées, les estimations sont imprécises et suivent des schémas-types d'erreurs qui biaisent les données de structure mais aussi les tendances démographiques. Différents indicateurs ont été conçus pour évaluer ces données : ils permettent de mettre en évidence des irrégularités et de poser des hypothèses sur leurs causes mais pas de les vérifier ni de les documenter. Dans cette communication nous utilisons un corpus inédit de données longitudinales sur une population rurale du Mali, qui fournit un appariement individuel d'enregistrements collectés de façon totalement indépendante par 4 opérations : les recensements nationaux de 1976, 1987, 1998 et 2009. On a ainsi la possibilité d'examiner la dynamique des déclarations sur l'âge, à mesure que les individus avancent dans leur cycle de vie (âge, statut matrimonial, descendance...). La communication aura deux objectifs : 1) évaluer la fiabilité des déclarations sur les âges et son évolution ; 2) documenter les mécanismes d'erreurs de déclaration associés au statut des individus en évaluant les incohérences de déclarations entre recensements selon le cycle de vie parcouru par l'individu dans l'intervalle.

### **292. Transition Analysis as a Method of Age Estimation, a Reevaluation from an Anthropological Perspective**

**Patricia O. Hernandez Espinoza**, *Centro INAH Sonora*; **Lourdes Marquez Morfin**, *Escuela Nacional de Antropología E Historia (inah)*; **Meggan Bullock**, *Escuela Nacional de Antropología e Historia*

The analysis of demographic behavior with respect to age has been evaluated with various methodologies. With the purpose of comparing differences between traditional or classic aging methods and the transition analysis method proposed by Boldsen and colleagues (2002), we reevaluated age estimates in the San Gregorio Atlapulco skeletal assemblage, an osteological collection that dates to the end of the prehispanic period and that we consider suitable for paleodemographic studies due to the composition of the sample and its large size. The applied methodology resulted in substantial differences. It overestimated the skeletal age of the oldest adults, in comparison with previous estimations derived from traditional aging methods from physical anthropology, pushing the maximum age in the group to 100 years or more. These results will be discussed with respect to the principles of anthropological demography and previous studies of health in this population.

### **293. Psychosocial risks at work in Europe: when and how age matters?**

**Ceren Inan**, *Ministère du Travail, de l'Emploi, de la Formation professionnelle et du Dialogue social*

Europe is affected by an important ageing of its population, which will gain strength in upcoming decades and will also result in an “internal” ageing of the labour force. This massive structural change raises some questions about senior's emotional well-being at work and there is a growing literature on this matter. However, some studies focused only on senior workers and do not take into account the possibility that age or ageing can have a protective effect on some psychosocial risks or that those risks could have an age-related stability. This study proposes to examine the effect of age on work related psychosocial risk exposure and on their outcome. First were checked the presence (or the absence) of an age effect on work related psychosocial risk factors and their outputs. Secondly, when there is an age effect, some explanatory variables were introduced in order to control the robustness of this effect. According to these results, there is a clear negative age effect on job strain situation (more aged, less in job strain) and positive effect on the lack of social support (more aged, more socially isolated) and no or slightly positive age effect on mental health risk (WHO-5).

### **293. Labor Force Projections for Europe by Age, Sex, and Highest Level of Educational Attainment, 2008 to 2053**

**Elke Loichinger**, *Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/OeAW, WU)*, *Vienna University of Economics and Business*

One aspect of the expected negative economic consequences of population aging in Europe is based on the anticipated shrinkage of the labor force. However, a smaller but more productive labor force might be able to alleviate some of these expected consequences of population aging. Using data from the European Labor Force Survey, I project the economically active population for 26 EU-countries up to 2053 by age, sex, and highest level of educational attainment. Adding the education dimension has an effect on the absolute size of the projected labor force – due to significant heterogeneity in participation across education categories – and allows inferences about the composition of the labor force beyond the common projection dimensions age and sex. The results show that the European labor force – besides being older and “more female” – is projected to be composed of people that are significantly higher educated than today.

### **293. Ageing Dynamics of a Human-Capital-Specific Population: the Case of Italy**

**Dimitar Philipov**, *Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU)*; **Anne Valia Goujon**, *Vienna Institute of demography*; **Paola Di Giulio**,

*Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU); Dalkhat M. Ediev, Wittgenstein Centre, Vienna Institute of Demography and International Institute for Applied Systems Analysis*

Research on the effect of rising human capital on the consequences of population aging rarely considers the fact that the elderly population has its own human capital composition achieved through earlier schooling and work experience. Hence, for an elderly population of a fixed size and age-sex composition, the higher its human capital, the higher is the total amount of public pensions to be paid. We construct an old age dependency ratio (OADR) where we assign to each person a number of units corresponding to his/her level of human capital. The dynamics of this human capital-specific OADR is examined using data for Italy. Multistate population methods were utilized for long-term projections to 2107. Under specific conditions, a constant or a moderately increasing human capital may cause aggravation of consequences of population aging rather than their alleviation. We intend to replicate this study for several other European countries where data are available.

### **293. Can demographically caused cognitive decline in China and India be offset by investments in education?**

*Marcin Stonawski, International Institute for Applied Systems Analysis (IIASA) / Cracow University of Economics; Vegard Skirbekk, International Institute for Applied Systems Analysis (IIASA)*

Unprecedented growth in the elderly population shares is experienced in China and India, and this study focuses on the implications for overall cognitive functioning development in these countries. Age-related decline in certain cognitive abilities can imply a decrease in overall cognition levels. Although the cognitive ability levels among the 50 plus are lower in India, China ages faster than India – leading to the average cognition levels to fall faster in China and reducing the differences between the two countries. Improvements in education levels, however, could potentially have an opposing effect. We estimate that projected educational increases could lead to a stabilization of our human capital measure for China and a slight increase for India, in spite of aging.

### **294. Age-pattern of Mortality in India: An Exposition of Recent Household Death Approach**

*Ashish Kumar Kumar Gupta, International Institute for Population Sciences (IIPS); Laishram Ladusingh, International Institute for Population Sciences*

In spite of an increasing demand for reliable information of cause and distribution of mortality, civil registration systems in most developing countries still do not yield the complete and accurate data required for the direct estimation of mortality rates. In India, where Civil registration system and SRS lacks sufficient power to produce reliable estimates of mortality across life stages. Our knowledge of age-pattern of mortality depends largely on cross-sectional data from censuses/surveys providing us information on recent deaths in the households. Most of the household surveys are not designed to derive mortality estimates over all ages. This paper aims to fill this gap by analyzing large scale household survey (DLHS-III) conducted in 2007-2008 in India. We have computed age specific mortality rates for all age groups after adjusting infants/child exposure period by “Date by Year cohort” method. Further Brass two parameter logit model has been used to graduate non-linearity of estimated age specific mortality rates and subsequently smoothed age-specific survival probabilities has been used to construct life table at district level. This study clearly suggests that mortality estimates derived from recent household death approach using district level data yield comparable results with official death rates.

#### **294. Applications for measuring maternal mortality: Three case studies using verbal autopsy methodology**

*Sian Curtis, University of North Carolina at Chapel Hill; Robert G. Mswia, Futures Group; Emily H Weaver, University of North Carolina at Chapel Hill*

An estimated 287,000 women die each year from complications in pregnancy or childbirth. Millennium Development Goal 5 includes a target to reduce the maternal mortality ratio by three quarters by 2015. Accurate measurement of maternal mortality is needed to develop a greater understanding of the problem, to increase effectiveness of program planning and targeting, and to track progress toward this goal. In the absence of good quality vital statistics, a number of interim methods are used to measure maternal mortality. The purpose of this study is to document three community-based interim methods that measure maternal mortality using verbal autopsy: a post-census mortality survey in Mozambique, a sample vital registration with verbal autopsy in Zambia, and a large-scale household survey in Bangladesh. This study will summarize the measures of maternal mortality obtained from these three platforms, compare and contrast the different methodologies employed, and evaluate strengths and weaknesses of each approach. This study will show that verbal autopsy is a feasible method for collecting maternal mortality data in the absence of reliable vital registration data and that choice of an interim method is dependent on balancing the trade-offs between statistical considerations and feasibility in the local context.

#### **294. Maternal Mortality Estimation from House-Listing Operation of National Level Sample Surveys**

*Sayeed Unisa, International Institute for Population Sciences (IIPS); Tarun Kumar Roy, International Institute for Population Sciences (IIPS)*

Maternal mortality remained as one of the indicators of health and development goal. Many countries lack the estimate of maternal mortality, and in some countries, estimates are not very reliable. In case of India, Sample Registration System (SRS) estimates of maternal mortality based on three year pooled data are considered reliable in comparison to other sample survey. It may be noted that, in many sample surveys, rare events are not studied as it required large sample size. However, if the operation of house-listing can be used meaningfully to identify a rare event like maternal mortality and there is a high probability that all the members of household will remember this event. It may be noted that, around 5 to 20 percent of project expenditure is devoted for this operation, and this operation should be utilized to identify maternal deaths. Number of deaths covered during house-listing operation of any large scale survey will be certainly more than SRS. This will also help to get reliable estimates at the state level especially for those high focused states, where immediate attention is required for maternal care programme in India. The causes of deaths obtained from the nationally representative sample will be much more useful than localized oral autopsy survey.

#### **294. Measuring maternal mortality through the census: Experiences from African countries and their policy implications**

*Boubacar Sow, United Nations Population Fund (UNFPA)*

L'estimation correcte de la mortalité maternelle demeure un sujet délicat dans le contexte des pays africains à système d'état civil déficient. Or dans la mise en œuvre de politiques décentralisées, il est urgent d'obtenir des estimations à des niveaux suffisamment fins pour permettre aux décideurs de suivre les progrès réalisés. Plusieurs pays dont nombre de pays africains ont suivi les recommandations faites pour la série des recensements 2000 et 2010 en incluant dans leurs recensements des questions permettant de saisir les décès maternels au sens de la Classification Internationale des Maladies. Il s'agit des décès de femmes survenus au cours de la grossesse, lors de l'accouchement ou pendant les 6 semaines qui ont suivi la fin de la grossesse, sur période généralement d'un an avant le recensement. Ces décès sont rapportés aux naissances

vivantes enregistrées pour la même période. Cette mesure permet d'avoir des estimations détaillées sur une période relativement courte, précédant le recensement. Le présent papier fait l'état des lieux sur l'estimation de la mortalité maternelle à partir du recensement de la population lors de la série 2000 et 2010 des recensements en Afrique au sud du Sahara, dégage les leçons apprises et discute les implications en matière de recherche et politiques.

**295. Caring from a distance: exchange of support between migrant children and their parents in the Philippines**

*Elma Laguna, Bremen International Graduate School of Social Sciences; Helga De Valk, NIDI/Vrije Universiteit Brussel*

Filipino families are characterized by their adherence to filial norms and strong family ties. In the absence of a formal welfare system, the family provides a stable reservoir of emotional security and support. This familial support expectation is interesting to explore in the context of increasing geographic mobility, both internal and international, of Filipinos. Despite considerable internal and international migration of Filipinos, our understanding of how this phenomenon affects family relationship is still limited. The view of migrants as children with responsibilities and expectations to provide parental care, for example, has not been sufficiently explored in the literature. Using data from the 2007 Philippine Longitudinal Survey of Older people, this paper analyses how support is exchanged between older parents in the Philippines and their migrant children. Results reinforce the strong ties in Filipino families as manifested in the bidirectional flow of exchange between parents and children. Types of support exchanged also depend on the parents and children's capacity to provide support, their circumstances in the life course and the geographic distance between them, as measured by migrant children's location.

**295. Do transnational mothering and fathering practices differ? A case study of recently arrived immigrants in France**

*Tatiana Eremenko, Institut National d'Études Démographiques (INED) / Université Bordeaux IV*

A growing literature is focusing on the lives and practices of transnational families, particularly those with children. This study is based on the French context where despite a long history of immigration, the topic has been relatively overlooked. Even if numbers of transnational families based in France seem to have been decreasing in the last two decades, they have also changed in nature and are more often headed by female migrants. In this context, we aim to understand whether the migrant parent's gender has an impact on the practices and migration projects within these families with some previous studies pointing to gender specific parental responsibilities. Our results point to the fact that in order to understand the differences in transnational fathering and mothering practices, it is necessary to take into account the characteristics of the transnational family. Integrating this dimension into the analysis reevaluates the role of gender on these practices.

**295. The role of migration in explaining the timing and type of partnership formation among the Senegalese**

*Pau Baizan, Universitat Pompeu Fabra and ICREA; Amparo Gonzalez-Ferrer, Centro de Ciencias Humanas y Sociales*

In this paper we analyze the role of migration in partnership formation among Senegalese individuals. We use data from the survey «Migrations between Africa and Europe» (MAFE-Senegal) and event history models to examine differences concerning the timing of entry into first partnership by gender and migration status (non-migrants, migrants in EU, returnees from EU, migrants in other countries, and returnees from other countries). Our preliminary results indicate that being a migrant in France, Italy or Spain significantly increases the chances of entering into first partnership, for both men and women. For women, this is especially visible the year of their

migration, which clearly points to the increasing phenomenon of marriage migration also among Senegalese migrants. Furthermore, the results show that education and socio-economic status are clearly linked to the propensity to enter a first partnership transnationally, but this effect differs by gender.

### **295. Impact of Temporary Labour Migration on Women and Children in Georgia**

*Irina Badurashvili, Georgian Centre of Population Research*

In this paper we use the secondary data analyses of existing statistical data-sources and findings of studies on migration in Georgia, and results of conducted by us expert interviews and interviews with persons experienced migration of family members in order to investigate the social impacts of labour migration on country of origin. Special attention during implemented field activities was paid to the least studied in Georgia outcome of migration, new challenges induced by labour migration for the traditionally vulnerable social categories, as women, and children left behind. We found that migration social outcomes in Georgia are quite similar to the standard results of temporary labour migration for counties of origin presented in the migration literature focused across CIS countries, but some distinguished findings were observed in our study. We expect that labour migrants flows from Georgia are not likely to cease in the nearest future, as a Georgian labour market is characterized by the sharp unbalance between supply and demand of labour and remarkable numbers of returned migrants to Georgia aggravate the problems with deficit of paid employment in this country.

### **297. Ethnic differentials in effects of the 1st marriage and marital fertilities on below-replacement fertilities in Singapore, 1980-2010: a lifetable analysis**

*Keita Suga, National Institute of Population and Social Security Research*

We examines changes in nuptiality and marital fertility as determinants for fertility changes in Singapore for 1980-2010. Singapore has drawn demographers' attentions for intensive population control policies and their effects on fertility. One of the most frequently mentioned policy interventions is a promotion of marriage and its distinct effects by education attainment levels. Ethnic differentials of fertility are also argued as an extent that Chinese females are relatively better educated. Nevertheless, there are few studies directly analyzing either an effect of nuptiality on fertility changes or its ethnic differentials, partly because of a limited data availability. We estimates multistate lifetables of the 1st marriage and parity specific childbirths by ethnic group each year for 1980-2010 with an efficient use of limited data. Then, we decompose the effects of nuptiality and marital fertility on completed fertility measures constructed from the lifetables. Decomposition results uncover ethnic differentials and similarities: for overall fertility changes for 1980-2010, nuptiality accounted completely for Malay's fertility changes, while both nuptiality and marital fertility affected Chinese fertility; negative nuptiality effects have increasingly impacts both on Malay's and Chinese fertilities in recent years.

### **297. Family Policy Change and Second Birth Rates across Socio-economic Groups: The case of South Korea**

*Li Ma, Stockholm University, Department of Sociology, Demography Unit*

This study explores how women's socio-economic status is associated with their second birth intensity; and how family planning program may have contributed to this relationship. Data used for analyses come from Korea Labor and Income Panel Study (KLIPS) waves 1 to 10. Event history analysis has been applied to observe the association. Results show that Korean women's second birth trend has developed in tandem with the practice and abolishment of Korea's family planning program. Women's economic activity before first birth is positively associated with second birth intensity, while labor force participation after first birth hinders one-child mothers' likelihood of having another child. The abolishment of family planning program in 1988 seems to

have temporarily exhilarated second birth reversal of women who choose to be a homemaker after first birth, but not that of one-child mothers who belong to the labor force.

### **297. Way forward for China's Population Policy: Lessons from Four East-Asian Countries/Regions**

*Mengjun Tang, China Population and development Research Center*

China's population policy is now at a crossroad. Singapore, Japan, Korea and Taiwan, which are quite similar to China in terms of cultural traditions and policy trajectory, all choose pro-natal policies, yet the results were not satisfactory. The procedures of their policy transition can provide reference for China's policy options. This paper conducts an in-depth analysis of the motivation, process and features of policy change in these countries/regions, explains affecting factors and compares the characteristics and outcomes of population policy before and after the change. On such a basis and combining the realities of China, this paper analyzes the existing barriers to China's population policy change, and suggests China to initiate population change as soon as possible. It also calls for attention paid to the scientificness and democracy in policy-making, progressivity in policy adjustment and good coordination between policies.

### **297. Entering the post-demographic transition phase in Japan: Dynamic social changes toward new population regime**

*Ryuichi Kaneko, National Institute of Population and Social Security Research; Ryuzaburo Sato, National Institute of Population and Social Security Research*

In the first decade of the twenty-first century, the population of Japan began to decline, after reaching its peak of 128 million with the highest proportion of the elderly in the world. As witnessed its drastic shift to a new population regime, here we introduce the new concept of “post-demographic transitional phase” for Japan. In this paper, first, we give a characterization of the “post-demographic transitional phase,” rethinking classical theories of demographic transition. Second, we examine demographic indicators which show when and how Japan entered this new era, concluding that the shift occurred between the middle of the 1970s and the late 2000s as a process of inescapable event chain. Third, we illustrate that this shift is closely associated with the socioeconomic, cultural and even political changes prominent in its recent history. We are now faced with many difficult problems such as a rise in underemployment associating with marriage squeeze among youths, an increase in poor single households particularly among the elderly, and economic downturns and fears of a financial crisis at the national level. The study of the post-demographic transition of Japan from both theoretical and empirical aspects is imperative because the other Asian countries seem to follow the same dynamics.

### **298. Growing Gains, Growing Pains: What Explains Asian American Youth's Academic Advantage over Whites?**

*Yu Xie, University of Michigan; Amy Hsin, Queens College, CUNY*

Asian Americans youth gradually gain an academic advantage over their white peers in the years from elementary to high school. What accounts for this Asian-white divergence in academic performance over time? Using two longitudinal data sets, the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K) and the Educational Longitudinal Study (ELS), we construct academic trajectories of Asians and whites in U.S. schools and attempt to answer this question. Our research rejects a cognitive explanation, i.e., Asians become cognitively more able than whites over time. Instead, we find substantial support for a non-cognitive explanation: Asian students gradually outperform white students because the former develop better non-cognitive skills than the latter over time. This research adds an already large literature attesting the importance of non-cognitive skills for child development as well as for human capital formation.

### **298. Maternity during adolescence: cause or consequence of dropping out? Some evidence from southern cone countries**

*María Marta M Santillan Pizarro, CIECS CONICET; Eleonora Soledad Rojas Cabrera, CIECS (CONICET/UNC); Bruno Sebastián Ribotta, CIECS (CONICET/UNC); Daniel Alvaro Ortega, CEA-UNC*

Even though fertility during adolescence can be considered to favor dropping out, recent research suggests that maternity might constitute a life plan for those young women who live in contexts in which education is limited and rejected, or who lack (other) choices for the future. Considering this dilemma, we try to identify the prevailing order of the events, maternity and dropping out, in Southern Cone countries (Argentina and Uruguay). These countries do not have data collection instruments which allow for revealing the chronological order of the events. Nonetheless, it is possible to carry out an approximation exercise with census and household surveys data from the information about the educational situation, the number of school years completed, the young woman's age, her current fertility (children born during the last year) and retrospective fertility (total number of children). We use data of the Argentinean census (2001) and Household Survey of Uruguay (2006). At the same time, we are interested in finding out if becoming a mother has a different impact on the education of teenagers (and vice versa) according to their socioeconomic level, and the cultural and geographical sector they belong to.

### **298. Sexe des enfants et contribution des mères aux processus scolaires familiaux à Ouagadougou**

*Madeleine V. Wayack Pambe, ISSP/University of Ouagadougou*

Les recherches menées dans les pays industrialisés soulignent l'engagement parental comme un élément essentiel de la réussite scolaire des enfants, les mères semblant jouer un rôle privilégié d'écoute et de suivi, surtout auprès des filles. Basée sur des données d'une enquête quantitative qui concerne 727 femmes et 1268 enfants et adolescents, cette étude compare l'implication des mères dans les processus scolaires des enfants selon leur sexe à Ouagadougou. Les recherches sur ce sujet demeurent rares en Afrique subsaharienne. Nos résultats indiquent une asymétrie dans la mobilisation scolaire des mères selon le sexe de leurs enfants. Les mères s'impliquent plus dans les processus scolaires concernant leurs fils que leurs filles. Déterminées par leur niveau d'instruction, les chances que les mères participent aux processus décisionnels que sont la mise à l'école d'un enfant ou le choix de l'établissement scolaire qu'il fréquente sont plus grandes si celui-ci est de sexe masculin. Les femmes s'impliquent également plus dans le financement de la scolarité des garçons que des filles.

### **298. A cross-national comparison of adolescent bullying victimization in Mumbai India, Melbourne Australia and Seattle US**

*Solomon J Renati, INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH (ICSSR); Shreeletha Solomon, Institute for Child and Adolescent Health Research; John W Toumbourou, Deakin University, Australia; Richard F Catalano, University of Washington, US*

School violence begins with less serious bullying and victimization. It is important to investigate whether adolescent bullying victimization has comparable associations and determinants among countries. Paper deals with the International Youth Development Study project, and explore cross-national difference in bullying victimization in Seattle USA, Melbourne Australia and Mumbai India. A representative sample of 4,700 students in school Grade 5, 7 and 9 were surveyed in India in 2010. Sampling methods, survey procedures and instruments were matched to enable cross-national comparison with same-aged student cohorts surveyed in Seattle (N = 2,866) and Melbourne (N = 2,864). Analyses compared the prevalence of bullying victimization in matched age and gender cohorts. Prevalence rates for violence victimization were lower in Mumbai compared to the Melbourne and Seattle. Females showed lower levels of violence victimization

compared to males in all three nations. As the adolescents reach higher grades, violence victimization was decreasing in Mumbai in comparison to those in Melbourne and Seattle. School violence contributes to maladjustment in young people. Prevention and intervention programs should target bullying as an important risk factor.

### **300. A meta-GWAS (genetic-wide association search) of fertility tempo and quantum**

*Melinda Mills, University Of Groningen; Jornt J Mandemakers, University Of Groningen; Harold Snieder, Rijksuniversiteit Groningen; Nicola Barban, University Of Groningen*

Many industrialized societies experienced massive changes in both the postponement of age at first birth (tempo) and a drop in the total number of offspring (quantum) (Kohler, Billari & Ortega 2002; Mills et al. 2011). We carry out the first genome-wide-association-search (GWAS) meta-analysis to identify genes associated with age at first birth (AFB) and number of children ever born (NEB). GWAS represents a considerable methodological advance from previous approaches such as candidate-gene studies (Ku, Pawitan & Chia 2009). Previous research has demonstrated a genetic component to biological fecundity (Stolk et al, 2009) with twin studies estimating heritability of fertility behavior at approximately 40% (Kohler et al. 1999). Although research suggests an underlying genetic architecture of fertility behavior, the identification of genes is yet to be determined. Our meta-analysis combines GWAS findings of approximately 100,000 individuals from 52 cohorts, with preliminary results of the discovery stage completed by the IUSSP Conference.

### **300. Do short birth intervals have long-term implications for parental health? Results from analyses of Norwegian register data**

*Emily M D Grundy, University of Cambridge; Oystein Kravdal, University of Oslo*

Short inter-pregnancy intervals are associated with poorer birth outcomes and child survival. Some adverse effects of short intervals for maternal outcomes have also been reported. Stresses arising from depleted nutrition or from strains associated with raising two young children close in age might be hypothesised to also have longer term effects on parental health. Such possible longer term implications have rarely been investigated but two UK studies suggest negative effects of short birth intervals for both mortality and disability in later life. Here we investigate associations between inter-birth intervals and mortality risks in late middle age using high quality register data for the whole Norwegian population. We focussed on parents of two-four children and controlled for age, year of observation, education, age at first birth, parity and, in some models, whether or not there had been a change in co-parent since the previous birth. Results indicate some negative effects of birth intervals of less than 18 months and, to a lesser extent, intervals of 18-23 months on mortality risks of both mothers and fathers later in the life course. The lack of gender differentiation suggests the operation of biosocial pathways which, together with possible confounding via various selective influences, need further investigation.

### **300. Kin influences on fertility: a theoretical framework tested with a review of the literature**

*Rebecca Sear, London School of Hygiene And Tropical Medicine; Paul Mathews, London School of Economics And Political Science; Cristina Moya, London School of Hygiene and Tropical Medicine (LSHTM)*

Far from being an asocial process, reproductive decision-making in humans is affected by family and other social networks. However, the direction and strength of kin effects is inconsistent across studies. Explaining this variation requires a better understanding of what various fertility outcomes mean functionally and of each individual's strategic interests. Fertility metrics such as age at first birth, interbirth intervals, and total number of births are not as clearly related to a woman's fitness as say, child survival rates. Furthermore, these outcomes are functionally distinct, and decisions

about them can be made independently of one another. Additionally complicating matters, woman and her kin do not always have the same strategic considerations. In this paper, we develop a framework for comparing various accounts of why kin affect fertility. We test these possibilities by compiling and analyzing a database of kin effects on fertility from 130 articles from pre- and post-demographic transition settings. Focusing on how parents and in-laws might affect different fertility outcomes, we find that parents are more likely to have anti-natal effects on a woman's total fertility, and age at first birth, while in-laws are more consistently pro-natal. However, both parents and in-laws tend to shorten inter-birth intervals.

### **300. Investigating additive genetic, maternal, and paternal (co-)variation in fertility and educational level in the Netherlands. An application of the 'animal model'.**

*Jornt J Mandemakers, University Of Groningen*

Low levels of fertility in Western countries are often attributed to men and women pursuing careers first and babies later. Research has shown considerable similarity between parents-children and siblings in completed fertility and education. This raises the possibility that the effect of education on fertility is not causal, but has a genetic basis and/or arises due to non-genetic factors of the family of origin. Relatively little research investigates the (common) genetic origin of these outcomes. Most of the existing bio-demographic research on fertility uses the Danish Twin Study (cf. Kohler and Rodgers). It is crucial to extend this line of research to other contexts to generalize findings and gain insight into possible environmental variability. Unfortunately, twin data are not readily available for most contexts, but genetic origins can also be investigated using information from multi-generation surveys using the so-called 'animal model'. This is a mixed model that takes advantage of information on the relatedness of all individuals in a pedigree to estimate the genetic merit of an individual. We apply this model to the Netherlands Kinship Panel Study (8,200 families and 56,000 individuals) to investigate the role of additive genetic effects, maternal and paternal effects on (the co-variation of) fertility and education.

### **301. Living Arrangement, health status and mortality risk**

*Anne Herm, Tallinn University; Michel Poulain, Université Catholique de Louvain; Jon Anson, Ben Gurion University of the Negev*

Health status and mortality risks differ by type of living arrangement. Living as a married couple has a protective effect, whereas living alone is often associated with poorer health and higher mortality. Mortality is higher still for those living in institutions. However, given that those living in institutions are generally in poorer health than those living independently, it is unclear whether this higher mortality risk among the institutionalized population results from their poorer health, or from other causes. We use an exhaustive Belgian data set of 1.7 million persons aged 65 and above from the 2001 census, and model their survival during year 2002 using logistic regression and controlling for age, sex and education. The results confirm that living with a spouse is associated to the lowest mortality risk but survival for both is improved when the husband is older than the wife. Other types of family-household living arrangements are less favourable, while living alone is better for women than it is for men. Those living in institutions have a higher risk of mortality than those living in private households, irrespective of their health status. However this disadvantage declines with age, and effectively disappears after age 90.

### **301. Living arrangements of older persons in Southeast Asia: Trends, patterns and determinants**

*Jeofrey Bautista Abalos, Bureau of Labor and Employment Statistics; Maria Fonseca Camille Tan Baroña, University of the East Ramon Magsaysay Memorial Medical Center*

Using census data this paper aims to: 1) compare the trends and patterns of living arrangements of the older persons in Southeast Asia to see if there are significant similarities and differences that

transcend the diversity of this region; and 2) examine the factors affecting their living arrangements. Living arrangement is a good indicator of family support to the older persons because with whom the older persons live reflects the residential dimension of their family life and is an important social context of their day to day lives. This was categorised into: (1) one person household; (2) nuclear household; (3) extended household; and (4) other household classification. Living in an extended household remains the most predominant type of living arrangement among older persons in Southeast Asia, although the trend has been declining over time. In contrast, the proportion living in a one-person and nuclear household has been on the rise in these Southeast Asian countries. Moreover, more women than men live in a one-person and extended household while more of the latter than the former reside in a nuclear household. Finally the proportion living in an extended household varies by age, marital status, level of education and place of residence.

### **301. Living Arrangements of the Elderly in India: Who lives alone and what are the patterns of familial support?**

*Apoorva Jadhav, University of Pennsylvania; Sathyanarayana M Kundur, UNFPA; Sanjay Kumar, UNFPA; Kuriath James, Institute for Social And Economic Change*

This study is first in a series of multi-topic papers on ageing in seven states covering all regions of India. It identifies which elderly are most vulnerable to living alone and familial support they receive from children- instrumental and in-kind. The Building a Knowledge Base on Population Aging in India (BKBPAL) data is used- a novel survey encompassing 9,852 elderly. We find that a majority of elderly co-reside with other family members, but 22 percent of elderly either live alone (6%) or with spouse only (16%). Due to higher widowhood among women, they are more likely to live alone. Migration of children emerges as the most important reason for elderly living alone; however family conflicts and preference for independence are important. Additionally: illiterate, poor and socially marginalized elderly are more likely to live alone. Kin support through monetary transfers and frequent meetings is twice as likely for elderly living alone.

### **301. The timing of parental divorce and filial obligations to care for parents later in life**

*Joanna Sage, University of Southampton; Jane Cecelia Falkingham, University of Southampton; Maria Evandrou, University of Southampton*

This paper explores how the timing of parental divorce within a child's lifecourse can influence the obligations they feel to care for their parents later in life. The majority of studies have suggested that parental divorce that occurs earlier in a child's life will have the most detrimental effect on their relationships with their parents in later years, and their obligations to provide care for them as they grow old. Drawing upon life-history interviews with 42 adult children aged 36-65 in Southampton (UK), this contention is challenged by demonstrating how mid-life experiences of parental divorce have weakened participants' obligations to care in significant ways. In other cases where participants' parents experienced deteriorating marital relations in later life but rejected divorce, an emergent living arrangement was identified called 'living together apart'. This often involved the social withdrawal of fathers which weakened relationships with their adult children, and reduced their willingness to care for them in frailty. These findings are presented within the context of rising divorce rates in older age groups and a projected widening of the informal care gap in the UK. We conclude by considering the implications of these findings for family-centric social care policy.

### **302. Income Inequality, Social Capital and Health Status among the Urban Elderly in Japan: A Multilevel Analysis**

*Masataka Nakagawa, National Institute of Population and Social Security Research*

This study conducts a multilevel analysis to examine the association between community-level income inequality, social capital and health status among the urban elderly in Japan. An urban

subsample of a nationwide social epidemiological survey of over 100,000 people aged 65+ from 577 communities (school districts) – Japan Gerontological Evaluation Study: JAGES – is used for the analysis. Following the seminal work by Kawachi (2008), the community-level social capital indicator is created by aggregating individual-level data and measured by the proportion of the respondents who “trust others in the community”. The ecological-level analysis finds that there are significant community-level variations in the social capital indicator scores within the urban areas (nearly doubled), and they are significantly correlated with income inequality – measured by Gini coefficient – and health status – measured by self-rated health. The results of the multilevel analysis confirm that community-level social capital attenuated the degree of individual-level association between income inequality and health status by nearly 10%. The results imply the importance of enhancing social cohesion and facilitating social connectedness in dealing with elderly health issues under the combination of population ageing and growing socioeconomic inequality.

### **302. Simulated Social Networks and Partner Search: Linking Social Interactions and Demographic Outcomes**

*Jason D Hilton, University of Southampton*

Demographic change is a product of a complex web of social interactions. These interactions inform, motivate and facilitate demographic events such as family formation, childbearing and migration, and the social fabric on which these interactions take place has the form of a network defining links between individuals. Agent-based simulation modelling can formalise this link between network interactions and demographic outcomes and furthermore allows the systematic testing of the plausibility of hypotheses about how the two are linked. This paper describes results from a simulation model of interaction over a dynamic social network, in which agents have incomplete, evolving and falsifiable preferences as to potential partners. Calibrating the model against empirical partnership data allows an insight into the relationship between individual behaviour, network properties and patterns of partnership formation.

### **302. Social networks and everyday activity limitations among older native and foreign-origin population in Estonia**

*Liili Abuladze, Estonian Interuniversity Population Research Centre, Tallinn University; Luule Sakkeus, Estonian Institute for Population Studies, Tallinn University*

Mixed evidence exists about social networks' effect on older people's disability outcomes. New emerging family patterns and relationships can have impact on old-age coping. Literature comparing native and foreign populations from the aspect of limitations and social networks among elderly has been rare. This study looks at the limitations in everyday activities of people aged 50 years and older in Estonia. Data for this analysis comes from the fourth wave SHARE (Survey of Health, Ageing and Retirement in Europe). We explore the relationship between social networks and disability outcome among foreign and native populations with regression analysis. The indicator of limitations in everyday activities is considered an objective disability status measurement that is also used as the basis for calculating healthy life years. Previously, migrants in Estonia have indicated worse health and disability outcomes than the native population. Our analysis indicates that Estonian foreign-origin older population has higher chance of having zero or large networks than natives. No significant differences occur between limitation levels among migrants in the number of family members one has in the network; less limited natives are more likely to have more family members in their network than severely limited or not limited older natives.

### **302. The resilience of adult Canadian living in stressful situation in health: The role of social network**

*Jianye Liu, Lakehead University, Ontario Canada.; Roderic P. Beaujot, University Of Western Ontario; Zenaida Ravanera, University Of Western Ontario*

The relationship between social network and health status is examined by utilizing public use data of the 2008 General Social Survey on social networks in Canada. The focus of the study is to examine the buffering effect of social network on the health status of individuals living in the stressful situation by answering two research questions. Firstly, whether the social network can help individuals living in stressful situation keep their original health status or to help them be resilient. Secondly, if so, what is mechanism that the social network makes its contribution to the resilience of individuals facing stressful live event. In this study, resilience is measured by the difference between the expected health status and the observed one. Individuals doing better than the expected in health are defined as resilience. The main finding of this study is that, firstly, social network offers different support to people involved in it. Secondly, social network variables have significant effects on the resilience of stressful individuals. Lastly, social network variables reduce the negative effects of stress on health through offering resources that stressful individuals need to overcome stress. The policy implication of this study is to expand public service to offer more resources needed by people facing adverse situations.

### **303. The Strengthening Impact of Earnings on the Transition to Parenthood: Evidence from Norway 1994-2009**

*Rannveig V Kaldager, Research Department, Statistics Norway*

This study describes how the impact of earnings on transition to parenthood changes in the period 1994-2009 in Norway. By comparing changes the earnings-fertility relationship across gender, I cast light on whether the mechanisms linking earnings and the transition to parenthood have become gender neutral over time. Discrete-time hazard regressions are estimated on highly accurate data from the Norwegian population registers, covering all men and women at risk of having a registered first birth in the period 1994-2009. Results show a monotonously positive and substantial impact of annual earnings on first birth rate for men throughout the period. The impact of earnings on the transition to parenthood strengthens over time for both men and women, but more so for women. At the end of the period of study, the earnings-first birth relationship is similar across gender. The results show that despite generous welfare schemes and fairly stable economic conditions, earnings have become increasingly important for the transition to parenthood. The similarity across gender indicates that the mechanisms linking earnings and fertility in Norway have become gender neutral.

### **303. The role of the first birth in the transition to adulthood among male Uruguayan youngsters**

*Ana Laura Fostik, Institut National de la Recherche Scientifique (INRS); Mariana Fernández Soto, Facultad de Ciencias Sociales-Universidad de la República; Carmen Varela Petito, Facultad de Ciencias Sociales - Universidad de La República*

We analyse the rarely studied transition to the first birth among Uruguayan male youngsters in 1990 and 2008, applying survival analysis in an exploratory approach to survey data. Our findings suggest a later timing in the first birth for male youngsters compared to female youngsters, accompanied by an educational attainment level gradient that is present for both sexes. Also, the differentials by education show an augmentation between 1990 and 2008, leading us to establish the hypothesis of a process of polarization in the transition to the first birth between the two time periods. We examine the extent of simultaneity with other markers of the transition to adulthood, such as leaving the parental home, entering the workforce and leaving the educational system, in order to establish the role of the first birth in the larger process of the transition to adulthood

among males. We further analyse the impact of attributes such as region of residence and social origins.

### **303. Dynamic interplay of female and male attitudes and their mutual influence on fertility and contraceptive use decision-making: Evidence from Malawi and Nigeria**

*Neetu A. John, Johns Hopkins Bloomberg School of Public Health; Stella Babalola, Johns Hopkins University; Nancy V. Yinger, Population Reference Bureau*

**Objectives.** To understand the mutual influence men and women have on fertility and contraceptive use decision-making. With the shifting paradigms in reproductive health, understanding male influence on female reproductive behavior is a high priority. Malawian and Nigerian women continue to have more children than they desire. Unmet need for contraceptives remains high (26% in Malawi, 20% in Nigeria), although, the two countries reflect very different contraceptive use patterns. **Methods.** Data was collected using qualitative methods. A total of 47 focus group discussions and 32 in-depth interviews, were conducted across the countries. **Thematic analysis** was utilized to identify patterns. **Results.** Women and men influence each other's fertility preferences and contraceptive decision-making in complex ways. While men might feel dominant in marital relationships, they too feel constrained in their normative environment. Women are far from silent bystanders; they strategize to accomplish their fertility goals. **Conclusion.** Women and men influence each other's fertility and contraceptive behaviors in complex ways. Contextual realities have an important influence in determining patterns of dependence and influence between spouses. Knowledge of relationship dynamics and context can be useful to achieve couple fertility desires.

### **303. Knowledge and use of contraceptive among married males of northeast states of India**

*Konsam Dinachandra Singh, International Institute for Population Sciences; Manoj Alagarajan, International Institute for Population Sciences*

Past family planning programs in India have been mainly directed toward women. However, because north eastern states remains a patriarchal society characterised by early age at marriage for women, men at present continue to determine familial fertility and contraceptive decisions. Consequently, the willingness of husbands to adopt or allow their spouses to use family planning practices will determine the pace of fertility reduction in north east states. Data from the third National Family Health Survey (NFHS-3) conducted in 2005-06 collected information from a nationally representative sample of 124,385 women age 15-49 and 74,369 men age 15-54 in 109,041 households provides key indicators of contraceptive prevalence, on currently married males (couples) in the age group 15 to 54, along with many other characteristics. Bivariate and multivariate statistical methods are used for analysing the cross linkage between the dependent and independent variables. The results suggest that there is high knowledge of contraceptives, a generally negative attitude towards limiting family size for economic reasons, and consequently low rates of contraceptive use. The trend in North-East states of India shows that the use of temporary method is more popular than sterilisation.

### **304. Adolescent Fertility in India: What Programme needs for sinking it?**

*Kasturi Mondal, International Institute for Population Sciences (IIPS); Chander Shekhar, International Institute for Population Sciences (IIPS)*

This paper describes a study aiming to elicit the needs of adolescents' fertility behaviour and unmet needs in India and major states. The objective was to understand levels and patterns of adolescent fertility in India and its major states and to see the unmet needs in family planning, also recognizes the information which could guide the development of adolescent-friendly health services by grass root level health workers. This study used the DLHS 2007-08 data and SRS data to meet the objectives. The findings demonstrate that there is clearly an unmet need for

information about effective family planning services, also a large unmet need for spacing (28.4) which is often perceived by adolescents to be of primary importance. Integrating these issues into programmes is likely to be an essential element in developing health services and programmes which can reach out to the majority of adolescents in India.

#### **304. Family planning programmes and the reduction in fertility in South and Southeast Asia** *Nai Peng Tey, University of Malaya*

The fertility level in Asian countries has been declining, albeit at different pace, since the launching of family planning programmes about five decades ago. This paper uses data from published data to examine the relationship between family planning efforts, contraceptive use and fertility in four South Asian and four Southeast Asian countries. Data from Demographic and Health Surveys are used to examine fertility differentials within each country, with special emphasis on the effects of contraceptive use, women's education, age at marriage, work participation and their status in the family. Of the countries in this study, India was the first developing country to adopt a national family planning programme in 1952, followed by Bangladesh, Nepal and Pakistan, Indonesia and Philippines in the mid- 1960s to 1970. Vietnam and Cambodia adopted a national family planning policy as recently as 1993-1994. The pace of fertility decline in South Asia accelerated only after 20-30 years of family planning program. In contrast, the impact of family planning programme on fertility decline was more immediate in the Southeast Asian countries. Scatter plots and regression analysis show that contraceptive prevalence rate (CPR) is related to family planning efforts, and fertility level is strongly associated with CPR.

#### **304. Policy or Development? Determinants of Low Fertility in China** *Li Zhang, Fudan University; Yan Wei, Xi'an University of Finance And Economics*

This paper deals with a debatable issue on the determinant sources of fertility decline in the world's most populous country where, over the last three decades, fertility has declined consistently and substantially to the below-replacement level. Main forces shaping such fertility change and their impacts on the adjustment of population-control policy have been debated in academic circles. Taking cases of the universal two-child policy, a group of academics have asserted that China's current low fertility is not simply a result of the one-child birth-control policy and its various permutations. Based on a closer investigation of these two-child programs, which have been perceived as an unique case of birth-control experiment for almost thirty years, this paper demonstrates that such programs are an "adapted and adjusted" but tenacious continuity from the national population control process in terms of the timing of marriage, the number of children, and the childbearing interval. Our analysis demonstrates that fertility outcomes in China are largely a function of birth rationing.

#### **304. Stratégies de planification familiale insuffisantes pour infléchir la fécondité au Bénin** *Elise Ahoey, Insaé*

Au Bénin, les niveaux actuels de la fécondité s'expliquent en partie par la faible pratique de la contraception (6% pour les méthodes modernes des femmes en union en 2006), alors que les besoins non satisfaits en contraception ne connaissent pas une réduction noble : passant de 26% à 30% entre 1996 et à 2006. Cet article tente de répondre à cette préoccupation par les méthodes de décomposition de Eloundou-Enyegue et Giroux (2010) dans la compréhension des changements sociaux applicables aux phénomènes socio-démographiques et sanitaires pour estimer les effets induites par les différentes couches sociales au Bénin avec les données de l'EDS 1996-2006. En s'intéressant aux inégalités selon les catégories socio-économiques, le faible relèvement du niveau des demandes insatisfaites en contraception seraient liés au changement de comportement. Cette mutation a plus touché les femmes en union des classes moyennement aisées parce que, les

stratégies mises en place ont atteint petit à petit les couches vulnérables de la population. L'évolution constatée a été le fruit des politiques de bases mis en place jugées suffisantes pour atteindre toutes les couches sociales vulnérables du pays, mais insuffisant pour les populations les plus nantis.

### **305. Intergenerational Similarities in the Transition to Marriage in Mexico**

*Julieta Perez Amador, El Colegio De Mexico*

This paper aims to provide a more comprehensive sociodemographic view of the transition to marriage in Mexico, a country with a relatively young and stable age at marriage during most of the twentieth century when important socioeconomic and demographic changes also took place. It builds on the idea that the transition to marriage is influenced simultaneously by social context, family context, and individual's early biography and socioeconomic status. Unlike previous studies that examine the transition to marriage in Mexico, I consider theoretically and analyze empirically the role of intergenerational influences on marriage timing. I analyze the extent to which mother's age at marriage is related to children's age at marriage. I find that children of mothers who married young enter into marriage earlier than children of mothers who delayed marriage. This relationship persists after controlling for important socioeconomic factors. In fact, the effect of mothers' age at marriage on children's age at marriage is larger than the effect of mother's education. I also find this relationship to be similar for both sons and daughters, suggesting that family influences are a key aspect of the transition to marriage in Mexico.

### **305. Intergenerational Transmission of Age at First Birth in the United States: Evidence from Multiple Surveys**

*Keuntae Kim, University of Wisconsin at Madison; Jeong-Hwa Ho, Ajou University*

It is well established that the timing of childbearing is transmitted from parents to children in the United States. However, little is known about how the intergenerational link has changed over time and under structural and ideological transformations associated with fertility behaviors. This study first considers changes across two birth cohorts from the National Longitudinal Study of Youth (NLSY) in the extent to which parents' age at first birth is transmitted to their children. The first cohort includes individuals born during the late 1950s through the early 1960s (NLSY79) while the second includes individuals born in the early 1980s (NLSY97). Results from discrete-time event history analyses indicate that the intergenerational transmission of age at first birth between mothers and daughters as well as between mothers and sons significantly increased over the period. These results were confirmed by analyses of data from three cycles of the National Survey of Family Growth (NSFG) spanning the same time period. Over this period, age at first childbirth became increasingly younger for children born to teenage mothers and increasingly older for those born to mothers who entered parenthood after age 25. These patterns have important implications for reproductive polarization and the low-fertility trap hypothesis.

### **305. Intergenerational Transmission of Age at Parenthood. A Longitudinal Study of the Impact of Intergenerational Transmission of Fertility Behavior**

*Kirk Scott, Lund University; Maria Stanfors, Centre for Economic Demography/Dept of Economic History, Lund University*

Using a recently created multigenerational register, this study examines the fertility integration of second generation immigrants in Sweden in light of the fertility history of their parents, their co-ethnics, and the native population. We study the extent that children of immigrants have assimilated to host-country norms in terms of entrance into motherhood, with a focus on the role of labor market status in the process of becoming mothers for groups from varying national backgrounds. Using register data comprising the entire Swedish population, we examine the

process of becoming parents for second-generation immigrants while controlling for the reproductive and labor-market history of the parental generation.

### **305. The influence of parental characteristics on a child's probability of interracial marriage in Brazil**

*Maria Carolina Tomas, Universidade Federal de Minas Gerais (UFMG)*

This paper investigates to what extent parental endogamy can influence the endogamy of a child and how parental race affects the race of a child's spouse, using data from the Brazilian Social Survey (PESB) for the year 2002. The analysis also considers the type of parental union (exogamy/endogamy) in order to capture possible differences that effect the race characteristics of a child's spouse as a result of the type of union between the parents. The characteristics of a parental union may influence the choice of a child's partner through different mechanisms, such as, i) socialization; ii) the individual's marriage market, and iii) direct parental influence regarding partner choice. The results show that, on average, children of racially endogamous couples are about 78.8% more likely to be in an endogamy union themselves than in a racially exogamous marriage. Parental education is also significant. The results by type of parental union show that parental race matters only for exogamous couples, and an individual's own race is more relevant among children of endogamous parents. The results for the analysis of parental race and the race of a child's spouse show that having nonwhite parents decreases the probability of a child marrying a white spouse. For this specific case, parental education is not statistically significant.

### **306. In Situ Adaption and Migration: Enablers and Constraints Among Rural Households of the Mountainous Region of Southern Ningxia, Northwest China**

*Yan Tan, the University of Adelaide*

This study focuses on in situ adaptation and migration processes and consequences among rural households of the semi-arid mountainous region of southern Ningxia, northwest China. It takes Xiji county, a hotspot of climate change with a population dominated by ethnic groups, as a study area. A combination of stratified and random sampling methods and structured face-to-face surveys were used to collect primary data at the village and household levels. Regression models are used to describe and quantify the relationship between outcomes of different adaptive approaches and factors influencing the adaptive capacity. The study argues that migration can play a more important role than in situ adaptation in particular local circumstances. Absence of in situ adaptation has not only caused declines in livelihood sources and adaptive capacity of local people but also jeopardised their ability of taking other options of migration other than government-led resettlement. Institutional factors (policies and programs of the Chinese government) are critical factors influencing households' perception of climate change and resultant adaption means adopted. The study suggests that adapting approaches should be developed by differentiating population groups and by incorporating local contextual factors, especially institutional factors.

### **306. Social Vulnerabilities in Environmentally Induced Migration: Evidence from Mali and Senegal.**

*Victoria van der Land, ISOE - Institute for Social-Ecological Research; Diana Hummel, ISOE - Institute for Social-Ecological Research*

In the West African Sahel, the majority of the population depend on subsistence or small-scale farming and are thus particularly vulnerable to environmental changes. One possible response to environmental changes is migration. However, the impact of environmental changes on migration remains unclear since migration is considered a multi-causal phenomenon. Whether people choose migration as an adaptation strategy to environmental change depends on their vulnerability to these changes, their capabilities and preferences. This paper addresses the issue of environmentally induced migration as an adaptation strategy and its links to social vulnerability by using the

example of education and gender as important indicators of social vulnerability. The research focuses on two areas in the West African Sahel – Bandiagara in Mali and Linguère in Senegal – that are presumed to be particularly affected by climate variability and environmental degradation. We illustrate that people’s motives of and capabilities for migration differ considerably between gender and the level of education and show under which social-ecological conditions migration constitutes an important adaptation strategy to environmental changes.

### **306. Is migration an adaptation strategy to climate-related environmental events in the forest-savanna transition zone of Ghana?**

*Mumuni Abu, Regional Institute for Population Studies (RIPS); Samuel Nii Ardey Codjoe, University of Ghana*

Migration is at the centre of population and environment research because of recent reports about the consequences of climate change on the human population. This paper examines the extent to which migration has been used as an adaptation strategy in response to climate-related events in the forest-savannah transition zone of Ghana. Using a mix method approach with data from the Climate-change Collective Learning and Observatory Network Ghana project and Ghana Meteorological Service Department, we employ descriptive statistics to examine how migration has been used as a livelihood strategy in response to climate-related environmental events. The results indicate that previous experiences of droughts and floods did not trigger out-migration from the study communities. However, the gradual decline in the fertility of the soil coupled with the unpredictable nature of rainfall patterns in recent times is making families take a second look at farming which is their main source of livelihood thereby encouraging the youth to migrate to cities for alternative jobs. The study concludes that sudden environmental hazards like flooding may not necessarily trigger out-migration but slow changes such as gradual increase in the dry season and decline in soil fertility are drivers of migration in the transition zone of Ghana.

### **306. Who Is Most at Risk of Becoming a Natural Disaster Victim? Urban Flood Risks in the Ouaga HDSS (Burkina Faso)**

*Yempabou Bruno Lankoande, Institut Supérieur des Sciences de la Population (ISSP); Stéphanie Dos Santos, Institut de Recherche pour le Développement (IRD); Jean-Paul Peumi, Département de Démographie, Université de Montréal; Aude Nikiema, Institut National des Sciences de la Société, Ouagadougou, Burkina Faso. ; Bassiahi Abdramane Soura, Université de Ouagadougou*

Even though previous reports have already highlighted evidence of a relationship between exposure to natural disasters and urban poverty, the complex processes underlying this association still remain poorly studied in West Africa, with little individual empirical data. The objective of this communication is to analyze factors associated with the status of “natural disaster victim” in Ouagadougou, the capital-city of Burkina Faso. On September 1st, 2009, this city experienced torrential rainfall leading to immense water runoffs and floods. Over 150,000 people were severely affected and 50,000 completely lost their homes. It is these people that this study undertakes to examine, defining here “natural disaster victim” as a household that completely lost their home. Modeling data from the Ouagadougou Health and Demographic Surveillance System with logistic regressions, the preliminary results suggest that the migrant status and gender play an interesting role in addition to the poverty index and level of education.

### **307. The Demographic Foundations of the Lived Experience of Kin Death**

*Sarah Zureick-Brown, Emory University; Emilio Zagheni, Queens College, City University of New York (CUNY)*

The last two centuries have been marked by extremely large increases in life expectancy and reductions in variability of age at death. In this paper, we analyze how the ‘mortality revolution’ has altered individuals’ lived experience of death during life. Drawing upon nearly 360 years of

historical and projected age-specific demographic rates for Sweden, we use formal demographic analysis and microsimulation to measure the extent and timing of child loss across the demographic transition as well as the average age at first experience of death of a maternal kin member and the type of kin death experienced. Our results indicate a considerable reduction in child loss across cohorts and a concentration of child loss in old age, an increase in the average age individuals experience their first maternal kin death, and a shift in first death experience from that of a sister, mother, or aunt to that of a grandmother. The transformation of the lived experience of kin death that we document has had profound implications for the health and well-being of individuals, the timing of major life course events, and the inequality of access to kinship resources.

### **307. The Historical Fertility Transition at the Micro Level: Why some are so early and some so late**

*Tommy Bengtsson, Lund University; Martin Dribe, Lund University*

Our aim is to explore socioeconomic fertility differentials in an industrializing community; to gain insight about the details and discuss possible mechanisms. The study starts well before industrialization and finishes at the end of the transition. We use longitudinal individual-level data from the Scanian Economic-Demographic Database, which contains demographic as well as socioeconomic information, including occupation, landholding and income. In the analysis we use hazard regressions with shared frailty at the family level. The transition involved not only parity-specific stopping but also spacing. While the upper social strata had higher fertility prior to the transition, they started to control their fertility earlier, by the 1880s, and also more consistently. Farmers, the middle class and skilled workers followed in the decades after, and unskilled workers with some additional delay. These findings are inconsistent with several of the major explanations in the literature, such as mortality decline, increased female labor force participation and a quantity-quality trade-off, but consistent with an innovation process where new ideas and attitudes about family limitation spread from the elite to other social groups.

### **307. Was there any gendered preferences for children during the fertility transition? Results from Germany 1825–1900**

*Glenn Sandström, Umeå University; Lotta Vikström, Umeå University*

Demographers demonstrate an increasing interest for studying parental gender preferences in developing countries and more developed societies. They find an association between the sex-composition of living offspring and the probability of having an additional child. In history, parents' gender preferences have proven difficult to verify. This study makes use of John Knodel's German village genealogies to obtain knowledge on this issue during a period of fertility transition, 1825-1900. Couples at first marriage who gave birth to minimum four children are targeted. Event history analyses (Cox regression models) of couples' duration and propensity to progress to fifth parity, helps us to test if the probability to have additional children was influenced by the sex-composition of surviving children at lower parities. It appears that preferences for son(s) did influence parents' reproductive behavior, as those having only girls experienced the highest transition rates to fifth parity. However, couples married from approximately 1870 onward started to exhibit a fertility behavior consistent with the desire to have at least one surviving boy and girl. That the gender preferences became more symmetrical already during the fertility decline we view as an surprisingly early move toward a modern European pattern.

### **307. The fertility transition in North-East Italy. A micro-analysis using a new source**

*Marcantonio Calabiano, Università di Messina; Gianpiero Dalla Zuanna, University of Padova*

The transitional decline of fertility in Italy has never been studied using micro-data, with the exception of a few small areas. For the first time, we use individual retrospective fertility data

collected for 20% of married women aged 40 or older interviewed in the 1971 census in the Veneto Region (North-East Italy), a “late-comer” area in the context of Western European fertility decline (TFR=5.0 in 1871 and 1921, 2.5 in 1951). In order to consider broad explanations of fertility decline, we combine individual retrospective data with other information available at two territorial levels (65 districts or large cities and 582 municipalities), using a three-level clustered regression model (district, municipality, woman). We find that: (1) even if the (few) university-educated women born in the last decades of the 19th century already had a TFR around two, this value is not seen among women with low levels of education until those born fifty years later; (2) the link between fertility and secularization strengthens cohort after cohort, whereas the connections between fertility and industrialization and fertility and urbanization weaken.

# Index of Paper Authors / *Index des auteurs de communications*

The number is that of the Session in which the paper is presented / *Le nombre représente le numéro de la séance dans laquelle la communication est présentée.*

Aassve, Arnstein.....	204	Alagarajan, Manoj .....	303
Abalos, Jeffrey Bautista.....	151, 301	Alam, Nurul .....	277
Abbasi-Shavazi, Jalal. 46, 127, 235, 263, 266, 288		Alam, Shamma Adeeb .....	8
Abel, Guy J.....	20, 86	Albader, Abdulaziz A.H. ....	14
Abokyi, Livesy .....	289	Albano, Alessandro.....	251
Abu, Mumuni .....	306	Alkema, Leontine .....	94, 162, 210
Abuladze, Liili.....	302	Alter, George .....	200
Abuya, Timothy Osebe .....	83	Althaus, Fran .....	169
Abuya, Benta A .....	153	Alvarez Antonio, Carlos .....	277
Acharya, Arun Kumar .....	255	Alves, Jose Eustaquio Diniz .....	3, 184
Achyut, Pranita.....	9, 83, 133, 164	Amadou Sanni, Mouftaou.....	96, 164
Acuña, Mario.....	260	Amanya, Leo .....	152
Adamo, Susana Beatriz .....	257	Ambrosetti, Elena .....	182, 208
Adebowale, Ayo Stephen.....	210	Amézquita, Lizethe Alejandra .....	231
Adedini, Sunday A .....	73, 210, 238	Amireddy, Bheemeshwar Reddy .....	22
Adetunji, Jacob.....	98	Amo-Adjei, Joshua .....	116
Adewole, Isaac .....	126, 205	Amoako Johnson, Fiifi.....	225
Adeyemi, Adebajo Babalola.....	121	Amoateng, Acheampong Yaw .....	64
Adeyoju, Temitope Oluwaseyi.....	157	Amouzou, Agbessi.....	94
Adjamagbo, Agnès .....	290	Anand, Ankit .....	239
Adjei, Eunice .....	83	Anand, Enu .....	285
Adjei, George .....	289	Ananta, Aris.....	137
Adjiwanou, Visseho .....	233	Andersen, Kathryn L .....	289
Afolabi, Sulaimon Atolagbe.....	156	Andreev, Kirill.....	72, 91, 282
Agadjanian, Victor 4, 135, 144, 161, 163, 188,		Andro, Armelle .....	256
193, 266		Angotti, Nicole .....	147
Agrawal, Ankush.....	193	Anigboro, Oluwasegun .....	229
Agrawal, Praween Kumar .....	29, 155, 259	Anson, Jon .....	301
Agrawal, Tushar .....	214	Antigo, Mariangela Furlan.....	291
Aguilar Rivera, Ana Mylena .....	42, 118	Antobam, Samuel Kojo Kojo.....	6, 265
Aguirre Martinez, Alejandro .....	8	Apouey, Benedicte Helene .....	8
Ageyi - Mensah, Samuel .....	88, 207	Appiah, Margaret .....	262
Ahiadeke, Clement .....	52	Ardington, Cally .....	165
Ahmed, Aftab Uddin .....	9	Arifin, Evi Nurvidya.....	137, 198, 299
Ahn, Mi-Suk.....	97	Arima, Serena .....	208
Ahovey, Elise .....	304	Arkaah, Yaw Johnson .....	64
Aich, Paramita.....	289	Armbruster, Benjamin .....	226
Aiken, Abigail R.A.....	67, 166	Arnoux, Delphine .....	256
Akinlo, Ambrose .....	27, 121	AJ, Francis Zavier.....	120, 139
Akinyemi, Akanni Ibukun.....	21, 51	Arokiasamy, Perianayagam 72, 78, 130, 248, 273	
Akinyemi, Joshua Odunayo .....	210	Arruti, José Maurício .....	267
Akter, Mst. Farhana.....	131, 195	Arulogun, Oyedunni Sola .....	164

Asato, Waka .....	85	Bawah, Ayaga A.....	52, 195
Asis, Maruja Milagros .....	182	Baxter, Jennifer Anne .....	290
Asuming, Patrick.....	212	Baya, Banza .....	89
Atla, Uma Maheswararao .....	239	Baynes, Colin.....	52, 97
Attane, Isabelle.....	151	Bayona, Jordi.....	129
Avendano, Mauricio.....	87	Beauchemin, Cris.....	86, 250
Awolude, Olutosin A.....	126, 205	Beaujot, Roderic P.....	227, 302
Axinn, Willaim.....	233	Beaujouan, Eva .....	57, 157
Azebaze Kagou, Alice Jacqueline .....	218	Becker, Stan.....	61, 132, 209
Azongo, Daniel .....	262	Beegle, Kathleen.....	52
Babalola, Stella .....	233, 303	begum, dilruba .....	277
Bachan, Lauren Kate .....	166	Begum, Sharifa .....	77
Badurashvili, Irina.....	110, 295	Beguy, Donatien .....	11, 231, 257, 289
Baeninger, Rosana.....	129, 266	Behera, Rabi Narayan.....	63
Baey, Grace HY .....	45	Belhassaini, Aziz .....	113
Bagi, Balal.....	120	Bell, Martin.....	91
Bailey, Claire E .....	236	Bellis, Gil.....	117
Bailey, Neil G.....	6	Bellows, Ben.....	51, 131
Baillet, Julie.....	216	Belting, Katharina Anna .....	111
Baizan, Pau.....	250, 295	Benabaye, Rosario Marilyn S .....	97
Bajos, Nathalie .....	152	Bengochea, Julieta .....	159
Bajracharya, Ashish .....	51	Bengtsson, Tommy .....	200, 249, 307
Bakamjian, Lynn .....	98	Beninguisse, Gervais .....	81, 148, 256
Balarajan, Meera .....	250	Benova, Lenka .....	279
Balarajan, Yarlina .....	118, 180	Berger, Lawrence.....	143
Baldwin, Wendy.....	274	Bergouignan, Christophe .....	43
Balk, Deborah .....	257, 277	Bernardi, Laura .....	119, 261, 267
Banegas, Israel .....	23	Berrington, Ann .....	31, 44
Banens, Maks .....	74	Berrington, Ann M.....	197
Banerjee, Sushanta .....	289	Bhagat, Ram Babu .....	91, 270
Bangha, Martin W .....	262	Bhatla, Nandita .....	133, 164
Bankole, Akinrinola .....	126, 152, 205	Bhatnagar, Isha .....	121
Banks, James .....	145	Biddlecom, Ann.....	13
Barban, Nicola.....	41, 273, 300	Bignami, Simona .....	188
Barbiera, Irene .....	292	Bijak, Jakub .....	43, 86
Barbieri, Alisson F .....	291	Bijwaard, Govert E .....	225
Bardakova, Lidia .....	141, 205	Billingsley, Sunnee .....	57
Barden-O'Fallon, Janine .....	82	Birungi, Harriet.....	9
Barik, Debasis .....	78	Bisiriyu, Luqman .....	27
Barker, Gary.....	133	Black, Nyasha Cheyenne .....	237
Barker, Kriss .....	50	Blades, Nakeisha .....	52
Baroña, Maria Fonseca Camille Tan .....	301	Blum, Maya .....	82
Barquero, Jorge .....	91, 260	Bocquier, Philippe .....	11, 156, 270
Barros, Juliana Vasconcelos de Souza .....	99	Bodrova, Valentina .....	141
Bartley, Melanie .....	181	Boggs, Carol .....	223
Baschieri, Angela .....	23	Bohk, Christina .....	14, 162
Basten, Stuart .....	204, 234, 283	Bolano, Danilo.....	41
Basu, Alaka .....	3	Bongaarts, John .....	150
Basu, Tanima.....	78	Bonifacio, Gabriela de Oliveira .....	99
Bates, Katherine .....	248	Bonnet, Carole .....	212
Baudisch, Annette .....	61, 223	Booth, Heather.....	115, 215

Borgerhoff Mulder, Monique .....	170	Caruthers, Hillary .....	89
Borja, Judith .....	95	Carvalho, José A. Magno de .....	99
Bouanchaud, Paul .....	56	Carvalho, Regiane .....	199
Bouchoucha, Ibtihel .....	13	Caselli, Graziella .....	169
Bourbeau, Robert .....	16, 53, 249	Casique, Irene .....	134
Boyd, Monica .....	90	Casterline, John B. ....	88
Bradford, Judith .....	154	Castiglioni, Maria .....	292
Bradley, Sarah E.K. ....	126, 132, 141, 190	Castro Martin, Teresa .....	59, 74, 158
Brandt, Martina .....	111, 279	Castro Torres, Andrés Felipe .....	231, 286
Branson, Keith .....	236	Catalano, Ralph .....	249
Branson, Nicola .....	165	Catalano, Richard F .....	298
Brazil, Noli .....	238	Cau, Boaventura Manuel .....	259
Brenes-Camacho, Gilbert .....	16, 208	Cauchi-Duval, Nicolas .....	181
Breschi, Marco .....	200	Caussin, Henri .....	292
Breton, Didier .....	181	Cavenaghi, Suzana M .....	3, 184, 187, 216
Bristow, Helen .....	121	Cazes, Marie-Hélène .....	117
Broström, Göran R .....	11, 264	Cebotari, Victor .....	196
Brouard, Nicolas .....	70	Cela, Eralba .....	182
Bruckner, Tim-Allen .....	249, 276	Cetorelli, Valeria .....	75
Brzozowska, Zuzanna .....	157	Chahoua, Said .....	10
Buchet, Luc .....	292	Chalasan, Satvika .....	80
Buckley, Cynthia Jane .....	194	Chandra, Anjani .....	12
Bui, Thi Hanh .....	67	Chandra, Rakesh .....	136
Bujard, Martin .....	18	Chandrashekhar, Chandrashekhar .....	217
Bullock, Meggan .....	292	Chang, Dukjin .....	15
Bumpass, Larry .....	142	Chang, Kyung-Sup .....	69
Burger, Oskar .....	14	Chang, Yuting Yu-Ting Chang .....	74
Burkimsher, Marion .....	235	Channon, Andrew "Amos" .....	179
Busetta, Annalisa .....	75	Chao, Fengqing .....	210
Bussini, Odoardo .....	133, 237	Charles Emmanuel, Mouté Nyokon .....	148
Bweupe, Maximillian .....	126	Charles-Edwards, Elin .....	91
Caarls, Kim .....	250	Chatterji, Somnath .....	160
Cabella, Wanda .....	44, 235	Chattopadhyay, Aparajita .....	224, 239
Calegari, Marília .....	266	Chaudhury, Nayanjeet .....	120, 167
Calhoun, Lisa .....	82, 83, 124, 166	Chauhan, Rajesh Kumar .....	23, 198
Caltabiano, Marcantonio .....	307	Chaurasia, Aalok Ranjan .....	98, 283
Calvert, Clara .....	2	Chavez-Galindo, Ana Maria .....	91, 260
Calvo, Juan José .....	229	Che, Yan .....	274
Camarda, Carlo Giovanni .....	11, 26, 53	Chen, Chen .....	129
Cambois, Emmanuelle .....	84	Chen, Gong .....	168
Campbell, Cameron .....	200	Chen, he .....	168
Cangiano, Alessio .....	20, 281	Chen, Huashuai .....	223
Canudas-Romo, Vladimir .....	43, 280	Chen, Xiangsheng .....	56
Cao, Huiqing .....	223	Cheng, P. C. Roger .....	206
Caporali, Arianna .....	18	Cheng, Zhiming .....	76
Carba, Delia .....	95	Cheung, Siu Lan Karen .....	68
Carella, Maria .....	93, 251	Chiao, Chi .....	64, 155
Carey, James .....	70, 223, 256	Chiao, Yih .....	155
Carling, Jorgen .....	45	Chihana, Menard .....	23
Caron, Marianne .....	185	Chin, Brian .....	179
Carrière, Yves .....	113	Chirutha Paramban, Abdul Jaleel .....	66

Chiu, Chi-Tsun.....	195	Cruz, Grace.....	24, 269
Cho, Sun Mi.....	127	Cunha, Estela Maria.....	110
Cho, Youngtae.....	134, 138, 150, 160	Curran, Jennifer A.....	193
Choe, Minja Kim.....	142, 157	Curtis, Katherine.....	25
Choi, Hwajung.....	77	Curtis, Sian.....	294
Choi, Kate H.....	92, 237	Cusidó-Vallverdú, Teresa Antònia.....	59
Choi, Seemoon.....	118, 220	Czaika, Mathias.....	20, 182, 251
Choi, Seulki.....	54	Dagnino, Ricardo S.....	267
Choi, Yoonjoung.....	78, 132	Dalla Zuanna, Gianpiero.....	292, 307
Choonara, Shakira.....	157	Dang, Linh Thuy.....	29
Chouapi Kouam Dzutseu, Nadège.....	52	Danho, Jeannette Kakou Bassimbie.....	98
Chow-Ching Tu, Edward.....	54	Das, Dhiman.....	45
Christiaensen, Luc.....	52	Das, Kailash Chandra.....	76, 210
Chu, Annie.....	118, 179, 252	Das, Kumudini.....	210
Chu, C. Y. Cyrus.....	170	Das, Madhumita.....	133
Chudnovskaya, Margarita.....	258	Das, Upasak.....	214
Chuie Hong, Tan.....	45	Dasgupta, Aisha.....	236
Chun, Heeran.....	234	Dasre, Aurélien.....	188
Chung, Christine E.....	72	Datta, Subhra.....	141
Ciera, James.....	25, 148	Davila, Ana-Luisa.....	130
Ciferri, Ludovico.....	138	Davin, Berengere.....	198
Cincotta, Richard.....	15	Davison, Raziél J.....	223
Čipin, Ivan.....	57	de Haas, Billie.....	17
Civelek, Yaprak.....	119	De Haas, Hein.....	20, 45, 251
Clark, Jennifer Bryson.....	255	de la Mora, Gabriela.....	291
Clark, Peter D.....	284	de Loenzien, Myriam.....	256
Clark, Samuel.....	26, 156, 191	De Santis, Gustavo.....	68
Clarke, Lynda.....	70, 289	De Silva, Weraduwege Indralal.....	158
Cleland, John.....	23, 274	De Souza, Roger-Mark.....	25
Coast, Ernestina.....	126	De Stavola, Bianca.....	279
Cobos, Maria-Isabel.....	66	De Valk, Helga.....	7, 18, 90, 295
Codjoe, Samuel Nii Ardey.....	306	De Wet, Nicole.....	64, 99, 156
Cogneau, Denis.....	58	De Winter, Tom.....	7
Cohen, Alan A.....	223, 268	Deboosere, Patrick.....	14
Cohen, Joel E. E.....	20, 53	Decarie, Yann.....	113
Collins, Emily.....	136	Deindl, Christian.....	111, 279
Collinson, Mark A.....	6, 156	Dekeyser, Graziela.....	90, 219
Contreras, Juan Manuel.....	133	Delaunay, Valérie.....	31, 117, 265
Corbeil, Jean-Pierre.....	253	Demate, S. Esperance.....	19
Corker, Jamaica.....	6, 153	Demey, Dieter.....	31
Cortina, Clara.....	74, 158	Demoulin, Fabrice F.D.....	224
Costa, Rafael.....	101, 270	Demuru, Elena.....	280
Costa, Sandra Maria Fonseca da.....	161	Deng, Yongheng.....	123
Cotton, Cassandra.....	257	Desai, Sonalde.....	3, 51
Courgeau, Daniel.....	292	Desesquelles, Aline.....	280
Crampin, Amelia C.....	2, 23, 236	Desgrees Du Lou, Annabel.....	218
Crimmins, Eileen.....	145	Deslandes, Kim.....	134
Croft, Trevor.....	190	Di Giulio, Paola.....	293
Cruz Castanheira, Helena.....	189	Diaconu, Viorela.....	53
Cruz, Christian Joy P.....	24	Diawara, Sory Ibrahima.....	28
Cruz, Cristina Elizabeth.....	111	Dieme, Ndeye Binta.....	216

Diguet, Dominique C. ....	256	Engracia, Luisa .....	30
Dillon, Lisa .....	185	Enuameh, Yeetey Akpe .....	289
Ding, Xiaoyan .....	274	Eremenko, Tatiana .....	295
Dingle, Antonia .....	51	Erfani, Amir .....	28
DIONE, Djibril .....	265	Ersanilli, Evelyn .....	45, 128
Djianou Kamba, Lucile .....	44	Ervin, Daniel .....	291
Docquier, Frederic .....	159	Esantsi, Selina Fosuaa .....	83
Doggett, Elizabeth .....	121	Escalada, Leslie del Puerto .....	97
Dommaraju, Premchand .....	299	Escobar Latapí, Agustín .....	23
Donehower, Gretchen S .....	47	Eshai, Kanwal .....	190
Dong, Hao .....	186, 264	Esia-Donkoh, Kobina .....	126
Donrovich, Robyn .....	219	Esimai, Olapeju .....	27
Dorbritz, Jürgen .....	42	Esses, Victoria .....	228
Dorelien, Audrey M .....	225	Estanislau, Bárbara Roberto .....	267
Dorrington, Rob E .....	94, 117	Esteve Palos, Albert. 59, 74, 112, 202, 232, 278	
Dos Santos, Stéphanie .....	124, 306	Ettarh, Remare .....	116
Douillot, Laetitia .....	31, 117, 265	Ette, Andreas .....	75
Douptcheva, Nedialka .....	28, 179	Evandrou, Maria .....	31, 275, 301
Drage, Mona .....	2	Evans, Ann .....	44
Dribe, Martin .....	101, 200, 307	Exavery, Amon .....	72
Dube, Albet Lazarous Nkhata .....	23, 236	Ezeh, Alex Chika .....	209, 256
dubey, manisha .....	144	Falkingham, Jane ... 31, 217, 225, 261, 275, 301	
Duku, Stephen Kwasi Opoku .....	179	Fan, Victoria Y .....	220
Dulal, Bishnu .....	82	Fantin, María Alejandra .....	257
Dupont, Véronique D.N. ....	282	Faribasadat, Banihashemi .....	46
Duthé, Géraldine .....	31, 110, 117, 256	Farina, Patrizia .....	285
Dutta, Bornali .....	217	Fassa Daniel, Tolno .....	146
Dutta, Garima .....	24	Faye, Cheikh Mbacke .....	97
Dutta, Paramita .....	141	Faye, Ousmane .....	160
Duvander, Ann-Zofie .....	143, 227	Feingold, Beth J .....	277
Duvoisin, Aline .....	79	Feldhaus, Michael .....	21
Dwyer-Lindgren, Laura .....	208	Feldman, Marcus W .....	7, 150
Eaton, Jeffrey W .....	211	Fenelon, Andrew .....	53
Ebeling, Marcus .....	61	Fenenga, Christine J .....	179
Ediev, Dalkhat M. ....	206, 293	Feng, Qiushi .....	122, 223
Edmonston, Barry .....	60	Ferguson, Laura .....	2
Edvinsson, Soren .....	11, 124, 264	Fernandez Castilla, Rogelio .....	187
Egesa, Carolyne Phyllis .....	152	Fernández Soto, Mariana .....	44, 303
Egidi, Viviana .....	280	Ferrand, Michele .....	152
Egondi, Thaddaeus .....	153, 262	Festy, Patrick .....	48
Eilers, Michelle .....	190	Field, Layton .....	10
Eilers, Paul H. C. ....	26	Fihel, Agnieszka .....	280
Ekoru, Kenneth .....	226	Filhon, Alexandra .....	199
Elbadawy, Asmaa .....	5, 24	Finneran, Catherine A .....	147
Eljim, Khalid .....	43	Firman, Tommy .....	129
Elo, Irma T .....	279	Fitch, Catherine A .....	284
Eloundou Enyegue, Parfait M. ....	256	Flaxman, Abraham .....	208
Emina, Jacques Be-Ofuriyua .....	194	Fletcher, Philip R. ....	122
Emmanuelle, Santelli .....	197	Fliegenschnee, Katrin .....	44
Emmott, Emily H. ....	163	Floyd, Sian .....	23
England, Paula S .....	73	Fokkema, Catharina .....	182

Foley, Jonathan .....	284	Gill, Wayne S .....	2
Fong, Eric .....	228	Glei, Dana .....	84
Fopa Diesse, Théophile Armand .....	50	Glynn, Judith .....	23
Fosdick, Bailey K .....	206	Gnele, Josette .....	290
Fostik, Ana Laura .....	74, 272, 303	Golandaj, Javeed ahamad A .....	92
Fotso, Jean Christophe .....	81, 97, 153	Goldani, Ana Maria .....	74
Frade, Sasha AP .....	156	Goldberg, Howard .....	205
Frankenberg, Elizabeth .....	276	Goldman, Noreen .....	84
Freire de Mello, Leonardo .....	161	Goldstein, Joshua .....	288
French, Neil .....	23	Goli, Srinivas 19, 63, 66, 99, 155, 168, 189, 239	
Freund, Inga .....	62	Gondwe, Levie .....	236
Frost, Melanie .....	234	Gonzaga, Marcos R .....	11, 149
Frova, Luisa .....	280	Gonzalez-Ferrer, Amparo .....	250, 295
Frye, Margaret .....	166	Gonzalez-Gonzalez, Cesar .....	145
Fu, Chonghui .....	283	Gorina, Evgenia .....	161
Fuchs, Regina .....	230	Gouem, Maria Wendnso Sidonie .....	221
Fuernkranz-Prskawetz, Alexia .....	62	Goujon, Anne Valia .....	230, 293
Fukuda, Setsuya .....	135, 203	Govil, Dipti .....	136
Furnas, Hannah .....	273	Granados Martinez, Abraham .....	22
gadeyne, sylvie .....	6	Grant, Alison D .....	2
Gage, Anastasia Jessica .....	51, 308	Grant, Laura .....	193
Gagnon, Alain .....	16, 219, 249	grassi, marzia - .....	196
Gakidou, Emmanuela .....	208	Gray, Matthew .....	290
Gakou Doumbia, Assa .....	292	Gregory, Simon .....	223
Galloway, Taryn Ann .....	220	Gregson, Simon .....	96, 156
Gampe, Jutta .....	26	Grigoriev, Pavel .....	125
Ganguly, Sujata - .....	21	Grim, Brian J. .....	203
Garbero, Alessandra .....	284	groenewold, george .....	90
Garbinti, Bertrand .....	212	Grossman, Daniel .....	67
García-Guerrero, Víctor Manuel .....	43	Grundy, Emily M D .....	31, 268, 279, 300
García-Román, Joan .....	112, 232	Gu, Baochang .....	204
Gastineau, Bénédicte .....	290	Gu, Danan .....	72, 91, 162, 282
Gaucaite Wittich, Vitalija .....	55	Gu, Jun .....	223
Gaur, Seema .....	159	Guberek, Tamy .....	255
Gauthier, Anne H. .....	163, 261	Gubhaju, Bhakta B .....	3
Gayet, Cecilia .....	149	Guedes, Gilvan .....	160, 291
Gaymu, Joëlle .....	68	Guengant, Jean-Pierre .....	88
Geary, Rebecca S. .....	289	Guerin-Pace, France .....	164
Gemmill, Alison .....	126, 258	Guha, Mohua .....	239
Genevois-Malherbe, Paskall .....	43	Guillaume, Agnès .....	152
Gerds, Caitlin E .....	167	Guilmoto, Christophe Z .....	202, 283
Gerland, Patrick .....	46, 72, 91, 162, 191, 282, 299	Guimarães, Raquel .....	42
Ghimire, Dirgha Jibi .....	203, 233	Gultiano, Socorro A .....	95
Ghiselli, Margherita E .....	170	Guo, Chao .....	168
ghislandi, simone .....	87, 116	Guo, Fei .....	76
Ghosh, Sancheeta .....	133	guo, qiuju .....	7
Ghosh, Soumitra .....	7	Guo, Zhigang .....	54
Giashuddin, M Sheikh .....	153, 274	Gupta, Ashish Kumar Kumar .....	294
Gibigaye A., Sall Moustapha .....	148, 164	Gupta, Kamla .....	239
Gil-Alonso, Fernando .....	129	Gupta, Pallavi .....	4
Giles, John .....	22, 95	Gupta, Shiv D .....	136

Gurak, Douglas T.....	228	Hiko, Tamashiro.....	160
Gurucharri, Alberto García.....	130	Hill, Allan G. G.....	179
Guzman, Daniel.....	255	Hill, Kenneth H.....	94, 252
Ha, Jung-Ok.....	286	Hilton, Jason D.....	302
Haage, Helena.....	122	Hinde, Andy.....	43, 234
Hackett, Conrad.....	203	Hingora, Ahmed.....	72
Haeck, Catherine Meredith.....	118	Ho, Jeong-Hwa.....	305
Hagey, Jill Melissa.....	274	Hoang, Cuc Thu.....	269
Häggröm Lundevaller, Erling.....	124	Hoke, Theresa.....	166
Hallman, Stacey.....	219	Hong, Mi.....	25
Ham Chande, Roberto.....	92, 93, 145	Hopkins, Kristine.....	67
Hamel, Christelle.....	197	Hoque, Muhammad Ziaul.....	179
Hamilton, Erin.....	237	Hoque, Nazrul.....	233
Hammer, Bernhard.....	62	Horiuchi, Shiro.....	68
Hammoudeh, Weeam.....	57	Hosegood, Victoria.....	211
Hamplova, Dana.....	212	Hossain, Abu Hasanat Mohammad.....	27
Hamrock, Caitlin.....	65	Hosseini Chavoshi, Meimanat.....	46, 235, 263, 288
Han, Seung Yong.....	224	Hosseini, Hatam.....	120
Hancioglu, Attila.....	49	Houle, René.....	253
Hank, Karsten.....	279	Hsieh, Ning.....	267
Hardee, Karen.....	67, 98	Hsin, Amy.....	298
Hardie, Jessica Halliday.....	287	Hu, Li-Chung.....	217
Harper, Cynthia.....	82	Hu, Ying.....	150
Harris, Katherine E.....	211	Hu, Yukun.....	50
Harris, Shannon M.....	98	Hubert Lopez, Celia.....	67
Hartwig, Kari.....	170	Hugo, Graeme John.....	266
Hauser, Elizabeth.....	223	Huinink, Johannes.....	21, 207
Hayford, Sarah.....	135, 193, 287	Hukin, Eleanor.....	119
Hayward, Mark D.....	279	Hull, Terence H.....	4, 263
Hazra, Avishek.....	121	Hummel, Cornelia.....	119
He, Wan.....	145	Hummel, Diana.....	306
Head, Sara.....	141	Humphrey, Jamie L.....	124
Heilig, Gerhard.....	72, 91, 282	hussain, rubina.....	190, 205
Heilman, Brian.....	133	Hutter, Inge.....	17
Heisler, Michele.....	77	Hwang, Myung Jin.....	192
Helgertz, Jonas.....	249	Hwang, nami.....	12
Helleringer, Stephane.....	72, 117	Hyun, Jinyoung.....	146
Hena, Ismat Ara.....	131, 195	Ibisomi, Latifat.....	111, 120
Henderson, Jillian.....	82	Idele, Priscilla Atwani.....	49
Henry, Sabine JF.....	25, 224	Ignacio, J. Andres F.....	25
Hepburn, Peter Scholfield.....	258	Ilombu, Onyebuchi V.....	51
Héran, François.....	1, 251	Imbert, Christophe.....	112
Herm, Anne.....	16, 79, 301	Imeraj, Lena.....	6
Hernandez Espinoza, Patricia O.....	292	Impicciatore, Roberto.....	41
Herrin, Alejandro N.....	97	Inan, Ceren.....	293
Herrmann, Michael.....	183	Irani, Laili.....	67
Hershbein, Brad.....	136	Isa, Muhammad.....	128
Hertrich, Véronique.....	118, 188, 292	Isabella, Buber-Ennser.....	42
Hessel, Philipp.....	87	ishii, Futoshi.....	215
Heuveline, Patrick.....	181	Isingo, Raphael.....	2
Hiekel, Nicole.....	59	Islam, Towfiqua Mahfuza.....	233

Isupova, Olga G.....	44	Kabir, Mohammad.....	153, 274
Ivanova, Alla.....	125	Kacou, Elise Amoin.....	56
Iwakami Beltrao, Kaizo.....	122	Kahn, Kathleen.....	156
Iwasawa, Miho.....	206	Kaida, Lisa.....	197
Izugbara, Chimaraoke.....	152	Kaldager, Rannveig V.....	220, 303
Jackson, Elizabeth.....	52	Kalisa, Ina.....	152
Jackson, Natalie Olivia.....	78	Kalule-Sabiti, Ishmael.....	64
Jacquemin, Mélanie.....	265	Kamal, Nahid.....	193
Jadhav, Apoorva.....	265, 301	Kamanda, Amie.....	43
Jah, Fatou.....	50	Kamata, Kenji.....	206
Jain, Anrudh Kumar.....	93	Kamgaing, Floriane Simo.....	81
Jain, Kshipra.....	92, 99	Kaneda, Toshiko.....	274
Jakob, Alberto.....	110	Kaneko, Ryuichi.....	135, 206, 297
James, Kuriath.....	72, 301	Kang , Choryok.....	134
James, Susan.....	170	Kanko, Teshome Desta.....	5
Jampaklay, Aree.....	45	Kante, Almamy Malick.....	117
Jang, Bohyun Joy.....	21	Kante, Almamy Malick.....	72
Jang, Insun.....	12	Kantorova, Vladimira.....	13
Janssen, Fanny.....	215	Kapend, Richard.....	43
Jarry, Valerie.....	16, 249	Kapoor, Atul.....	167
Jasilioniene, Aiva.....	143	karegar shooraki, mohammad reza.....	288
Jasilionis, Domantas.....	125	Karki, Yagya Bahadur.....	180
Jaspers, FAIJER Dirk J.....	55	Kato, Akihiko.....	89
Jatrana, Santosh.....	184, 222	Kaufman, Gayle.....	135
Jean-Luc, PRIMON.....	281	Kawachi, Ichiro.....	238
Jejeebhoy, Shireen J.....	120	Kawahara, Kazuo.....	110, 233
Jensen, An-Magritt.....	59, 258	Kawamori, Masahito.....	138
Jeong, Junmin.....	90, 228	Keizer, Renske.....	44
Jia, NIng.....	58	Kelly, Christine A.....	80
Jiang, Leiwen.....	201	Kelly, Yvonne.....	181
Jiang, Quanbao.....	234	Kennedy, Sheela.....	202
Jiang, Wei.....	274	Kersuzan, Claire.....	43
Jin, Xiaoyi.....	7	Keshri, Kunal.....	91, 222
Jing, Sun.....	25	Kesztenbaum, Lionel.....	58, 219
Jo, Julie Eun Jung.....	228	Khachani, Mohamed.....	182
John, Neetu A.....	303	Khan, M. Ejazuddin.....	121
Johnson-Hanks, Jennifer.....	142, 278	Khang, Young-Ho.....	234
Johnstone, Marjorie.....	281	Khosla, Rajat.....	286
Jolivet, Dominique.....	5	Khosravi, Ardashir.....	46
Jones, Gavin W.....	69, 278	Kidou, Brahim.....	161
Jongstra, Eduard.....	3	Kielmann, Karina.....	2
Jordan, Lucy P.....	217	Kiggundu, Charles.....	152
Jose, Joemet.....	115, 168	Kim, Ann H.....	75
Juarez, Fatima.....	52, 149, 167	Kim, Doo-Sub.....	30, 238
Juárez, Sol P.....	268	Kim, Erin Hye-Won.....	192
Judice, Nicole Ross.....	28	Kim, Ho.....	262
Jugder, Munkhbadar.....	254	Kim, Hyun Sik.....	181
Jung, Suntae.....	138	Kim, Hyung-seog.....	157
Justus, Ochieng.....	213	Kim, Ik Ki.....	269
Kabagenyi, Allen.....	121	Kim, Il-Ho.....	234
Kabbanji, Lama.....	256	Kim, Jung Ki.....	145

Kim, Jungho .....	146	Kundur, Sathyanarayana M .....	301
Kim, Keuntae .....	305	Kuntla, Shrikant Deshikendra.....	99, 155
Kim, Kyung-Hwan.....	123	Kupiszewski, Marek .....	91
Kim, Sang-Wook.....	100	Kurosu, Satomi .....	186, 200, 270
Kim, Seokho.....	128	Kusi-Appouh, Dela .....	24
Kim, Taejong.....	146	Kuyumjyan, Karine.....	110
Kim, Younoh .....	130	Kwak, Min-Jung .....	75
Kimani, Elizabeth.....	152, 153	Kye, Bongoh .....	186
Kimani, James K .....	83, 116	Laar, Amos .....	83
King, Rosalind B.....	12	Lachaud, James.....	139
Kippen, Rebecca.....	185	Ladusingh, Laishram .....	208, 269, 294
Kishor, Sunita.....	194	Laguna, Elma.....	295
Kivunaga, jackline Imali .....	83	Lahiri, Subrata .....	191
Klaerner, Andreas.....	44	Lahoti, Rahul .....	287
Klesment, Martin.....	42	Lakshmanasamy, Thangamuthu .....	227
Kluge, Fanny .....	47, 229	Lalou, Richard .....	265
Klusener, Sebastian .....	73, 101	Lalthapersad-Pillay, Pinky.....	66
Knerr, Beatrice .....	60, 213	Lam, David .....	165, 191, 209
Knoll Rajaratnam, Julie.....	94	Lan, Pei-Chia .....	85
Kobiane, Jean François ..81, 139, 187, 256, 271		Lanari, Donatella .....	133, 237
Kocourkova, Jirina .....	205	Land, Kenneth .....	162
Kodzi, Ivy.....	63	Langa, Kenneth.....	77
Koelet, Suzana.....	7	Lankoande, Yempabou Bruno .....	124, 306
Kohler, Hans-Peter .....	189	Lanzieri, Giampaolo .....	191, 206, 215
Koli, Rahul Rajendra.....	168	Lapierre-Adamcyk, Evelyne .....	212
Kolk, Martin.....	112, 170	Laplante, Benoît.....	74, 158, 202, 272
Kong, Guoshu .....	264	Lappegard, Trude.....	44, 73, 143
Koolhaas, Martín.....	159	Larriuz, María.....	130
Kostova, Dora .....	143	laure, hadj .....	214
Kowal, Paul .....	145	Laure, Moguerou .....	197, 281
Kowantanakul, Rungratana .....	4	Lawanson, Akanni Olayinka.....	252
Kraly, Ellen Percy .....	266	Lawson, David W .....	170
Krapf, Sandra .....	204	Le Bourdais, Céline .....	212
Kravidal, Oystein.....	63, 88, 300	Le Coeur, Sophie .....	2
Kritz, Mary M .....	159, 228	Le Goff, Jean-Marie.....	101
Kuate Defo, Barthelémy.....	13, 210	Lee, Chang-Moo.....	123
Kuepie, Mathias .....	194, 271	Lee, Chioun .....	84
Kuffour, Emmanuel Osei .....	83	Lee, Chulhee .....	264
Kugler, Tracy .....	284	Lee, Dohoon .....	73
Kukutai, Tahu Hera.....	253	Lee, Eunjung.....	75, 281
Kulczycki, Andrzej.....	75	lee, hanna .....	150
Kulkarni, Veena S.....	29	Lee, Hyewon.....	262
Kumar, Amit .....	136	Lee, Hyunjeong .....	229
Kumar, Chandan.....	49, 96, 232	Lee, James .....	186, 200, 264
Kumar, Jan .....	98	Lee, Ronald D.....	8, 26, 69, 170
Kumar, Kaushalendra.....	168	Lee, Sharon M .....	60
Kumar, Naresh .....	213	Lee, Sung-Yong.....	154
Kumar, Sanjay .....	301	Lee, Yeonjin .....	238, 279
Kumari, Divya.....	153	Lee, Yun-Suk.....	7
Kumari, Sangeeta .....	50	Lefebvre, Pierre .....	118
Kumi-Kyereme, Akwasi.....	116, 126	Légaré, Jacques.....	113

LeGrand, Thomas K. ....	139, 180, 233	Lundh, Christer .....	200
Lei, Xiaoyan .....	22, 145, 275	Luppi, Francesca .....	135
Leibbrandt, Murray .....	165	Lutalo, Tom .....	2, 226
Lelievre, Eva .....	2, 112	Lutz, Wolfgang .....	93, 139, 201, 230
León Díaz, Esther María .....	130	LUU, Bich Ngoc .....	67
Leone, Tiziana .....	221, 263	Luy, Marc .....	61, 84
Lerch, Mathias .....	179	Luz, Luciana .....	163
Lesclingand, Marie .....	256, 265	Lyons-Amos, Mark J .....	41, 59
Lesthaeghe, Ron .....	112	M, Benson Thomas .....	72
Letamo, Gobopamang .....	168	Ma, John Zhongdong .....	30
Leung, Nancy Ling Sze .....	254	Ma, Li .....	297
Levin-Rector, Alison .....	94	Mabika Mabika, Crispin .....	148, 271
Levira, Francis .....	72	Macadar, Daniel .....	91, 260
Levitz, Carly .....	94	Mace, Ruth .....	163
Leye, Els MM .....	285	Machiyama, Kazuyo .....	23, 274
Lhungdim, Hemkothang .....	168	MacQuarrie, Kerry LD .....	158, 194
Li, Jianxin .....	223	Madans, Jennifer .....	122
Li, Jing .....	56	Maddow-Zimet, Isaac .....	167
Li, Meng-Fan Mandy .....	195	Madhavan, Sangeetha .....	147
Li, Nan .....	46, 72, 91, 282	Madise, Nyovani .....	168, 194, 225
Li, Qingfeng .....	61	Mady, Gouda Roland Mesmer .....	96
Li, Shuzhuo .....	77, 150, 151	Magadi, Monica Akinyi .....	194
li, ying .....	234	Mahmood, Arshad Muhammad .....	236
Lichter, Daniel .....	19	Mahmoudian, Hossein .....	199
Liddle, Brantley .....	201	MAÏGA, Abdoulaye .....	89
Liebig, Thomas .....	85	Maiga, Modibo .....	28
Liedo, Pablo .....	223	Maitra, Shubhada .....	133
Lim Ah Ken, Patricia .....	49	Mäki, Netta .....	16
Lim, So-jung .....	65	Malacic, Janez .....	62
Lima, Ana Carolina da Cruz .....	114	Maliki, Maliki .....	48
Lin, Qianhan .....	95	Malmberg, Gunnar .....	124
Lin, Xingchen C.C. ....	186	Mamolo, Marija .....	183
Lindeboom, Wietze .....	277	Manatchtphong, Wanwiphang .....	116
Lindstrom, David P .....	80	Mancini, Fiorella .....	95, 147
Listya, Rachmanina .....	76	Mandemakers, Jornt J .....	273, 300
Liu, Jianye .....	227, 302	Manson, Steven .....	284
Lobo, Peter .....	75	Mariwah, Simon .....	126
Locoh, Thérèse .....	134	Marklund, Emil .....	185
Loeb, Mitchell .....	122, 137	Marquez Morfin, Lourdes .....	292
Loichinger, Elke .....	183, 229, 293	Marquez, Maria Paz Nazario .....	82
López Colás, Julian .....	202	Marston, Milly .....	2
Lopez Gay, Antonio .....	129, 202, 270	Marteleteo, Leticia .....	17, 65, 191
Lopez, Alan D .....	46	Martikainen, Pekka .....	53
Lopez, Anna Carla .....	193, 291	Martin Garcia, Teresa .....	158
Lopez-Carr, David .....	193, 276, 291	Martine, George .....	184
Loschmann, Craig .....	5	Martinez Garcia, Jacqueline .....	86
Lozano, Fernando .....	149	Martínez-Salgado, Mario .....	231
Lu, Chunling .....	252	Martinez-Viveros, Elvia .....	65
Lu, Jiehua .....	260	Masanja, Honorati .....	72
Lucas, Aaron .....	226	Masiye, Felix .....	208
Luci-Greulich, Angela Stefanie .....	142	Maslauskaite, Ausra .....	143

Maslovskaya, Olga.....	275	Mizoguchi, Nobuko.....	115
Mason, Andrew.....	8, 26, 69	Modin, Bitte.....	276
Masquelier, Bruno.....	117, 132	Modugu, Hanimi Reddy.....	263
Matanle, Peter.....	10	Mohamed, Shukri F.....	152
Matchoké, Vounki Tchouaféné.....	232	Mohanty, Sanjay K.....	23, 144, 198
Mathews, Paul.....	300	Mohd, Tariq.....	120, 167
Mathur, Ajit Kumar.....	13	Mokomane, Zitha.....	2
Maticka-Tyndale, Eleanor.....	17	Molesworth, Anna.....	23
Matsukura, Rikiya.....	47	Mondal, Kasturi.....	304
Matsuura, Hiroaki Muppy.....	220	Monden, Christiaan Willem Simon.....	225
Matthijs, Koen.....	90, 219	Monnier, Alain.....	68
Maughan-Brown, Brendan.....	226	Montana, Livia.....	49, 82, 124
May, John F.....	88	Montenay, Yves.....	267
Mazumdar, Sumit.....	198	Montes de Oca-Vargas, Hugo.....	22
Mazzucato, Valentina.....	196, 250	Montgomery, Mark R.....	201, 257, 277
Mazzuco, Stefano.....	31	Montoya-Arce, Bernardino Jaciel.....	22
Mbaruku, Godfrey.....	97	Moody, James.....	56
Mbuyita, Selemani.....	97	Moore, Ann Marie.....	126, 152
McAdams-Mahmoud, Ayesha M.....	147	Moreland, Scott.....	154, 224
McCaa, Robert.....	59	Morgan, S. Philip.....	192
McCalman, Janet.....	185	Moriizumi, Rie.....	135
McCormick, Tyler.....	26	Moriki, Yoshie.....	119
McDavid, Elizabeth A.....	28	Morissette-Thomas, Vincent.....	223
McDonald, Peter F.....	4, 80, 164, 235, 266	Moultrie, Tom.....	70, 80, 117, 166
McGrath, Nuala.....	211	Moya, Cristina.....	170, 300
McMunn, Anne.....	181	Mrema, Sigilbert.....	72, 262
McNicoll, Geoffrey.....	169	Mswia, Robert G.....	294
Medimurec, Petra.....	57	Mturi, Akim Jasper.....	211
Meggiolaro, Silvia.....	31, 127	Mudege, Netsayi.....	111
Mejia Pailles, Gabriela.....	149	Mueller, Hans.....	223
Mencarini, Letizia.....	135, 204	Mueller, Ulrich Otto.....	111
Menkes Bancet, Catherine.....	221	Muennig, Peter.....	238
Mensch, Barbara.....	80	Mukherjee, Aparna.....	49
Merli, M Giovanna.....	56	mukherjee, Saradiya.....	136
Merlo, Juan.....	268	Mulder, Clara H.....	270
Meurs, Dominique.....	113	Mullen, Erica Jade.....	113
Mfinanga, Sayoki GM.....	170	Mumah, Joyce N.....	231, 289
Mi, Hong.....	58	Mundil-Schwarz, Rabea.....	75
Micarandayo, Rachel.....	97	Muniz, Jeronimo Oliveira.....	61, 110
Michozounnou, Saturnine.....	164, 290	Murray, Christopher.....	46, 94
Mier Y Teran, Marta.....	231	Murunga, Violet I.....	67
Mikolai, Julia.....	41	Musange Furere, Sabine.....	152
Millogo, Roch Modeste.....	124	Mushati, Phyllis.....	156
Mills, Melinda.....	273, 278, 300	Mushore, Paradzai.....	96
Milot, Emmanuel.....	223, 268	Musila, Ruth N.....	25, 67
Minagawa, Yuka.....	125	Muszyńska, Magdalena Maria.....	14, 180
Miranda-Ribeiro, Paula.....	147	Mutemaringa, Themba.....	94
Mirembe, Florence.....	152	Mutevedzi, Portia.....	160
Mishra, Anurag.....	83	Muttarak, Raya.....	284
Mishra, Prakash Chandra.....	133, 164	Mutua, Michael M.....	152, 289
Missov, Trifon Ivanov.....	11	Mutunga, Clive.....	25

Mylne, Adrian .....	156	Ntshebe, Oleosi .....	196
Mynarska, Monika .....	44	Nyambo, Violet .....	120
Myrskylä, Mikko .....	53	Nyamukapa, Constance .....	2, 96, 156
Nair, P. Sadasivan .....	259	Nyberg Sørensen, Ninna .....	251
Nakagawa, Masataka .....	302	Nybro, Erica R .....	141
Nakiyingi-Miuro, Jessica .....	2	Nyirenda, Makandwe .....	160
Nalugoda, Fred .....	226	Obare, Francis .....	9, 131, 263
Nandy, Debasish .....	202	Obisie-Nmehielle, Nkechi C .....	73
Nankinga, Olivia .....	121	Odimegwu, Clifford Obby .....	73, 120, 157, 210, 238
Nappa Usatu, Jocelyn .....	250	Oeppen, Jim .....	14
Nathan, Rose .....	72	Ogawa, Naohiro .....	47
Nauriyal, D. K. ....	96	Ogunjuyigbe, Peter Olasupo .....	121
Nava-Bolaños, Isalia .....	22, 93	Okigbo, Chinelo Christine .....	97
Navaneetham, Kannan .....	259	Olah, Livia Sz. ....	135, 143
Nawar, Laila .....	92	Olga, Tougma .....	216
Nayak, Debendra Kumar .....	63	Oliveau, Sébastien .....	10, 202, 260
Nayak, Hiralal .....	263	Oliveira, Ana Maria Hermeto Camilo ...	22, 114
Naz, Saman .....	190, 236	Omideyi, Adekunbi .....	21
Ndiaye, Cheikh Tidiane .....	216	Omotor, Douglason .....	146
Nedoluzhko, Lesia .....	4, 188	Omotoso, Isaac .....	164
Neels, Karel .....	157, 220	Omoyeni, Sunday Tunde .....	21
Neilson, Jeff .....	290	Onda, Tsuyoshi .....	152
New, Jin Rou .....	94	Ongaro, Fausta .....	31
Newell, Marie-Louise .....	160, 211	Ong'ech, John Odero .....	2
Newhouse, David L .....	95	Oosthuizen, Morne .....	62
Newman, Karen .....	98	Oppenheim, Jacob N .....	53
Neyer, Gerda .....	18, 261, 267	Oris, Michel .....	79, 187, 200
Ng, Marie .....	208	Orji, Ernest O .....	121
Ng, Nawi .....	124	Oronje, Rose N .....	67
Ngadaya, Esther .....	170	Ortega, Daniel Alvaro .....	298
Ngowi, Bernard .....	170	Ortega, José Antonio .....	26
Nguemo, Joel Ngueabou .....	285	Ortensi, Livia Elisa .....	285
Nguyen, Liem T .....	29	Orubu, Christopher .....	146
Nguyen, Thi Mai .....	250	Osuafor, Godswill Nwabuisi .....	211
Nguyen, Thi Thieng .....	67	Ouadah-Bedidi, Zahia .....	13, 101, 134, 189
Ngwalo, Ruth O .....	236	Ouali, Amar .....	101
Ngwira, Bagrey Mdoni .....	236	Ouedraogo, Habibou .....	81
Nicolaas, Han .....	273	Ouedraogo, Souleyamane .....	165
Nikiema, Aude .....	124, 306	Ouellette, Nadine .....	53, 68
Ning, JIA .....	25	Owoundi, Joseph Parfait .....	252
Niu, Jianlin .....	222, 264	Owusu-Agyei, Seth .....	289
Nketiah-Amponsah, Edward .....	179	Ozden, Caglar .....	159
Noah, Abisola .....	83	Pace, Roberta .....	251
Noah, Aggie J .....	202, 237	Padmadas, Sabu .....	43, 225, 258
Nobles, Jenna .....	237, 276	Pailhe, Ariane .....	84, 113, 212, 272
Noh, Samuel .....	75	Palamuleni, Martin Enock .....	259
Noor, Forhana Rahman .....	131	Pallikadavath, Saseendran .....	165
Noronha, John Steven .....	72	Pan, William K .....	277
Noronha, Kenya .....	263	Panico, Lidia .....	143, 181
Norris, Shane .....	289	Panova, Ralina .....	42
Nouetagni, Samuel .....	271	Paparusso, Angela .....	182

Pappagallo, Marilena.....	280	Ploubidis, George B.....	279
Parahyba, Maria Isabel.....	122	Polprasert, Warangkana.....	222
Parant, Alain.....10, 93, 117		Pongou, Roland.....	13, 210
Paraponaris, Alain.....	198	Poniakina, Svitlana.....	125
Parasuraman, Sulabha.....	141, 248	Pontone, Silvia.....	68
Pardede, Elda L.....	76	Portner, Claus C.....	8, 52
Pardo, Ignacio.....	235, 291	Poston, Dudley L.....	10, 74, 111, 260
Park, Albert.....	145	Pothisiri, Wiraporn Toom.....	4
Park, Eunsun.....	128	Potter, Joseph E.....	67, 166
Park, Heejin.....	186	Poulain, Michel.....	16, 79, 301
Park, Hyunjoon.....	279	Prada, Elena.....	167
Park, Keong-Suk.....	140	Pradhan, Manas Ranjan.....	263
Park, Sang-Chul.....	140	Prakash, Ravi.....	199
Park, Wansoo.....	75	Premazzi, Viviana.....	182
Park, Yaeseul.....	254	Prickett, Kate C.....	17
Parsons, Chris R.....	159	Prieto, Victoria.....	45, 159
Parsuraman, Sulabha.....	99	Priya Nanda, Priya.....	82, 166
Passet, Jasmin.....	18	Protiere, Christel.....	198
Pasupuleti, Samba Siva Rao.....	184, 222	Prusty, Ranjan Kumar.....	49, 222
Patel, Rachana.....	208	Pujadas Rubies, Isabel.....	129
Patil, Kaveri Madhukar.....	224	Pullum, Thomas W.....	132
Patra, Shraboni.....	216	Puradiredja, Dewi Ismajani.....	56
Patxot, Concepció.....	47	Puri, Mahesh Chandra.....	82, 234
Pearson, Alan.....	289	Purohit, Neetu.....	136
Pechholdova, Marketa.....	280	Puschmann, Paul.....	90, 219
Pellegrino, Adela.....	159	Puur, Allan.....	42
Peng, Xiujian.....	183	Qi, Haodong.....	62
Penina, Olga.....	280	Qi, Yaqiang.....	222, 264
Pennec, Sophie.....	68	Qian, Zhenchao.....	19
Perales, Francisco.....	287	Qiao, Xiaochun.....	110
Perego, Viviana Maria Eugenia.....	116	Queiroz, Bernardo Lanza.....	11, 149
Perelli-Harris, Brienna.....44, 59, 157		Querci, Joël.....	260
Perera, Nishanthi.....	158	Racchumi, Julio Alfredo.....	199
Peres, Roberta.....	266	Rada, Codrina.....	275
Perez Amador, Julieta.....	44, 305	Raftery, Adrian E.....	156, 162, 191, 206
Pérez-Baleón, Guadalupe F.....	80	Rahardja, Mugia Bayu.....	82
Permanyer, Iñaki.....63, 202, 232		Rahman, Farhana.....	9
Persson, Lotta.....	158	Rahman, Laila.....	51, 195
PES, Gianni.....	79	Rahman, Md. Moshir.....	131
Peumi, Jean-Paul.....	306	Rahman, Mohammad Hifz Ur.....	137
Philipov, Dimiter.....	293	Rai, Rajesh Kumar.....	49, 99
Phillips, Abimbola Samuel.....	121	Raikoti, Merewalesi.....	3
Phillips, James F.....	52, 97	Raimundo, Ines Macamo.....	60
Picard, Jean-François.....	113	Rajbhar, Mamta.....	23, 283
Piedad Urdinola, Beatriz.....	286	Rajulton, Fernando.....	228
Pieroni, Luca.....	48, 133	Ram, Faujdar.....	165
Pilon, Marc.....	81, 265	Ramarao, Saumya.....	263
Pinto Da Cunha, José Marcos.91, 110, 129, 260		Ramchand, Divya.....	165
Piotrowski, Martin P.....	142	Rangkuti, Hasnani Nani.....	161
Pisareva, Alexandra.....	141	Ranjan Mishra, Nihar.....	263
Pison, Gilles.....	31, 117	Rashidian, Arash.....	235

Rau, Roland.....	14, 61, 162, 180	Rubalcava, Luis .....	237
Ravanera, Zenaida.....	227, 228, 302	Rubiales Pérez, Miguel .....	129
Ray, Amlan Kanti.....	12	Ruggles, Steven .....	284
Raymer, James .....	86	Ruiz-Salguero, Magda Teresa.....	66
Raymo, James .....	65, 89	Rutaremwá, Gideon .....	121, 231
Razeghi Nasrabad, Hajiieh Bibi .....	288	Rutstein, Shea Oscar .....	23, 190
Read, Sanna .....	31, 268	Sa, Zhihong.....	9
Recaño-Valverde, Joaquin.....	45, 86	Sacker, Amanda .....	181
Régis, Aubry .....	68	Sadeghi, Rasoul .....	266
Reimondos, Anna.....	4, 80, 132, 164	Sage, Joanna .....	301
Reith, Nicholas E.....	214	Saha, Subhasis .....	76
Ren, Qiang.....	217, 254, 275	Saha, Unnati Rani .....	225
Renati, Solomon J .....	298	Sahoo, Duryodhan .....	239
Reniers, Georges .....	2, 226	Saikia, Nandita.....	280
Rentería, Elisenda.....	47	Saito, Yasuhiko.....	110, 195
Ribotta, Bruno Sebastián.....	298	Sakkeus, Luule.....	87, 302
Rindfuss, Ronald R. ....	142, 157, 207	Sala, Gabriela Adriana.....	22
Rioseco, Pilar .....	115	Salinari, Giambattista .....	68
Rios-Neto, Eduardo L. G. ....	42, 232	Salvatore, Michele .....	280
RIOU, Françoise.....	68	Sambt, Joze.....	62
Ritschard, Gilbert .....	41	Samir, K.C. ....	20, 201, 299
Rivellini, Giulia.....	73	Sana, Mariano .....	117
Rivera Sepulveda, Vivian Natalia .....	86	Sánchez Barriga, Carolina .....	86
Rivero, Estela .....	76	Sánchez- Domínguez , María .....	79
Rob, Ubaidur .....	9, 131, 195	Sanchez Romero, Miguel.....	47
Robert, Alhassan Kaba .....	179	Sanchez, Landy L .....	291
Robertson, Laura .....	96	Sanchez-Gassen, Nora .....	18
Robine, Jean-Marie .....	68	Sander, Nikola .....	20, 114
Rocca, Corinne .....	82	Sanderson, Warren.....	183
Rocha , Sonia .....	65	Sandoval, Alex.....	277
Rochat, Tamsen.....	160	Sandström, Glenn .....	79, 185, 307
Rodrigues, Clarissa Guimarães .....	232	Sankoh, Osman .....	262
Rodrigues, Cristina.....	160	Santhya, K.G.....	139
Rodrigues, Roberto.....	11	Santillan Pizarro, María Marta M .....	298
Rodriguez Wong, Laura L.....	99	Sanz-Gimeno, Alberto .....	79
Rodriguez, Jorge.....	91, 216, 260	Sarah, Memmi .....	218
Rodriguez, Mariela.....	67, 98	Sarkar, Sanjit .....	236
Rojas Cabrera, Eleonora Soledad .....	298	Sasson, Isaac .....	276
Rojas Huerta, Abigail Vanessa.....	92	Sathar, Zeba Ayesha .....	167
Rollet, Catherine.....	118	Sato, Ryuzaburo.....	297
Romaniuc, Anatole.....	185	Sauer, Lenore.....	75
Root, Elisabeth Dowling .....	124	Sauvain-Dugerdil, Claudine.....	28, 179
Rosenthal, Jean-Laurent .....	219	Sawangdee, Yothin .....	222
Rosina, Alessandro.....	73	Sawyer, Cheryl .....	210
Ross, David A .....	2	Sazaki, Junko .....	100
Ross, Michelle.....	26	Scalone, Francesco .....	101
Rossier, Clémentine .....	3, 124	Schaffnit, Susan Barris .....	288
Rousseaux, Emmanuel .....	41	Schatz, Enid .....	147
Roy, Sayan .....	270	Scherbov, Sergei .....	183
Roy, Tarun Kumar.....	294	Schiavon, Raffaella.....	148
Rozée, Virginie .....	12, 258	Schmertmann, Carl .....	288

Schnettler, Sebastian .....	170	Singh, Aditya .....	64
Schoeni, Robert .....	77	Singh, Ajay K .....	151, 218
Schoumaker, Bruno .....	46, 86, 132, 230, 250	Singh, Ajay .....	120
Schumacher, Austin .....	94	Singh, Ashish .....	165, 214
Schur, Nadine .....	156	Singh, Deepti .....	19
Scott, Kirk .....	305	Singh, Dharmendra Prapap .....	282
Scott, Rachel .....	152	Singh, Gayatri .....	214, 282
Sear, Rebecca .....	170, 288, 300	Singh, Jayakant .....	285
Searing, Hannah .....	263	Singh, Konsam Dinachandra .....	303
Sebti, Mohamed .....	48	Singh, Lucky .....	49
Seck, Cheikh .....	97	Singh, Prashant .....	49
Sedgh, Gilda .....	126, 190	Singh, Prashant Kumar .....	99, 248
Seeley, Janet A .....	226	Singh, Rakesh Kumar .....	216, 236
Sekher, T.V. ....	19, 115, 116, 155	Singh, Ravendra .....	98
Sen, Gita .....	286	Singh, Rohit Kumar .....	190
Sen, Shrabanti .....	121	Singh, S. P. ....	96
Sengupta, Angan .....	139	Singh, Susheela D .....	52, 190
Sengupta, Ranajit .....	166	Sinyavskaya, Oxana V. ....	57
Sennott, Christie .....	147, 230	Sironi, Emiliano .....	73
Seol, Dong Hoon .....	85	Sironi, Maria .....	41, 204
Serbanescu, Florina .....	205	Skirbekk, Vegard .....	115, 203, 261, 293
Serhan, Randa B .....	213	Skrede, Kari .....	227
Shabnam, Shewli .....	221	Sluse, Catherine E. ....	256
Shah, Nasra M. ....	128	Smeeding, Timothy .....	89
Shah, Zakir Hussain .....	167	Smith, Ellen .....	224
Shahjahan, Md. ....	151	Smith, Jeff .....	56
Sharma, Ajay .....	114	Smith, Kirk .....	249
Sharrow, David J. ....	156	Smith, Peter W. F. ....	86
Shattuck, Dominick .....	121	Smith, Rhonda R. ....	274
Shekhar, Chander .....	24, 27, 83, 304	Snieder, Harold .....	273, 300
Shen, Ke .....	223, 249	Snopkowski, Kristin .....	170
Shim, Joyce Yonghee .....	192	Snyder, Anastasia Rebecca .....	21
Shimizu, Chihiro .....	123	Snyder, Elizabeth .....	28
Shin, Eui Hang .....	15, 140	Sobek, Matthew .....	284
Shkolnikov, Vladimir M. ....	125	Sobotka, Tomas .....	157
Shoff, Carla .....	202, 237	Sobrino, Jaime .....	91, 260
Short Fabric, Madeleine .....	132	Solaz, Anne .....	143, 212, 272
Siddhanta, Suddhasil .....	150	Soler-Hampejsek, Erica .....	80
Sidze, Estelle Monique .....	88	Solomon, Shreeletha .....	298
Sie, Ali .....	262	Somefun, Oluwaseyi Dolapo .....	156
Siegel, Melissa .....	5	Song, Jian .....	184
Sigle-Rushton, Wendy .....	196	Song, Yoo-Jean .....	238
Sika, Glebelho Lazare .....	56, 96, 285	Sosa Sanchez, Itzel A .....	221
Sikoki, Bondan Supraptilah .....	130	Sossa, Fortuné .....	180
Silva, Romesh .....	58, 255	Soura, Bassiahi Abdramane .....	3, 124, 306
Simao, Andrea .....	147	Souto, Guadalupe .....	47
Simard-Gendron, Anaïs .....	188	Sow, Boubacar .....	294
Simões, Rodrigo F. ....	114	Sparks, Corey .....	237
Simoni, Alessandra Traldi .....	267	Speizer, Ilene .....	82, 97, 166
Simplice kiteur, Lekeumo .....	228	Spijker, Jeroen J.A. ....	59
Singh, Abhishek .....	165	Spoorenberg, Thomas .....	72, 91, 189, 203, 254, 282, 299

Srivastava, Akanksha .....	198, 248	Tao, Ye .....	184
Stalter, Randy M .....	121	Tapia-McClung, Rodrigo .....	65
Stanfors, Maria .....	290, 305	Tapsoba, Placide .....	83
Staveteig, Sarah .....	23, 141	Tareque, Md. Ismail .....	110, 233
Stecklov, Guy .....	117	Tark, Ji Yun .....	160
Steichen, Elsa .....	197	Tartalha Nascimento Lombardi, Thais .....	267
Stephan, Amandine .....	118	Tata, Srinivas .....	55
Stephen, Elizabeth Hervey .....	12, 192, 254	Taulo, Frank .....	236
Stephenson, Robert .....	147	Tchoumkeu Pendeme, Alice Noël .....	148
Step toe, Andrew .....	145	Teerawichitchainan, Bussarawan Puk .....	130
Stevenson, Amanda J .....	67	Teixeira, Moema De Poli .....	122
Stillwell, John C H .....	91	Telle, Kjetil .....	196
Stoeldraijer, Lenny .....	215	Tenkorang, Eric Y .....	17
Stonawski, Marcin .....	203, 293	Terra, Luisa .....	160
Stranges, Manuela .....	75	Teruel, Graciela .....	237
Strauss, John .....	130, 275	Teto, Abdelkader .....	271
Streatfield, Peter Kim .....	277	Tey, Nai Peng .....	304
Stropnik, Nada .....	204	Thanakwang, Kattika .....	198
Stupp, Paul W .....	205	Theunynck, Zita .....	220
Styrc, Marta Emilia .....	143	Thomas, Duncan .....	276
Su, Yu-Ru .....	223	Thompson, Victor .....	253
Subramanian, S V .....	248	Thornton, Arland .....	203
Sudan, Falendra Kumar .....	255	Tian, Meng .....	275
Suga, Keita .....	297	Tian, Siyue .....	90
Sugawa, Makiko .....	233	Tian, Xiaoli .....	223
Sukontamarn, Pataporn .....	4	Timaeus, Ian Manfred .....	80, 166
Sully, Elizabeth A. ....	226	Timmerman, Margaretha .....	17
Sultana, Nargis .....	131, 195	Tlatlik, Rebecca .....	60
Sundaram, Aparna .....	52, 152	Tluway, Emmanuel D .....	97
Suzuki, Chiho .....	49	Todd, Jim .....	2
Suzuki, Toru .....	54	Todd-Lippock, Alexandria .....	98
Swaminathan, Hema .....	287	Toffolutti, Veronica .....	31
Swicegood, Gray .....	90	Tokin, A.S. Achille .....	19
Syse, Astri .....	195, 196	Tölke, Angelika .....	272
Szabo, Sylvia .....	284	Tollebrant, Johan .....	158
T, Dilip R .....	263	Toma, Sorana .....	90, 257
Tafferant, Nasser .....	119	Tomas, Maria Carolina .....	19, 305
Tai, Xiujun .....	234	Tønnessen, Marianne .....	196
Takahashi, Miyuki .....	270	Torabi, Fatemeh .....	120, 127
Takaruza, Albert .....	156	Torkashvand, Mohammad .....	199
Talukder, Md. Noorunnabi .....	195	Toulemon, Laurent .....	3, 57, 169
Tamaki, Emi .....	142	Toumbourou, John W .....	298
Tammes, Peter .....	197	Tran, Diem Hong .....	250
Tan, Poh Lin .....	192	Tran, Quang Lam .....	250
Tan, Qihua .....	223	Treiman, Donald J. ....	275
Tan, Yan .....	306	Trinitapoli, Jenny .....	273
Tang, Mengjun .....	297	Tropf, Felix Christian .....	273
Tang, Wenjuan .....	274	Tsala Dimbuene, Zacharie .....	13, 210
Tanle, Augustine .....	126	Tsuya, Noriko .....	142, 186, 200
Tanturri, Maria Letizia .....	127, 212, 288	Tu, Edward Jow-Ching .....	84
Tao, Wei .....	223	Tull, Carmen .....	98

Turu, Anna .....	74, 202	Vithayathil, Trina.....	214
Turunen, Jani.....	112, 143	Vlachantoni, Athina.....	77, 275
Tymicki, Krzysztof.....	89	Vlassoff, Michael.....	152
Udjo, Eric O .....	66	Vobecká, Jana.....	203
Ukwatta, Swarnalatha.....	144	Vogt, Gabriele .....	15
Ünalán, Turgay.....	49	Vogt, Tobias C.....	47, 229
Undie, Chi-Chi .....	263	Vusha, Sophie.....	2
Unisa, Sayeed.....	21, 49, 294	Wahab, Elias olukorede.....	229
Upadhyay, Shubhranshu.....	4	Wahome, Mercy .....	263
Urrea-Giraldo, Fernando .....	188	Wajnman, Simone.....	287
Usta, Jinan AR .....	218, 255	Wakefield, Jon .....	26
Utomo, Ariane .....	4, 80, 164	Wang, Fei.....	220
Utomo, Iwu Dwisetyani .....	4, 80, 164, 184	Wang, Feng.....	200
Uttamacharya, Uttamacharya .....	130, 248, 273	Wang, Guangzhou .....	283
Vagero, Denny .....	276	Wang, Haidong .....	46, 94, 208
Valencia, Jorge.....	148	Wang, Haochen .....	168
Vallin, Jacques .....	101, 110, 125, 189, 280	Wang, Jane-Ling.....	223
Van Bavel, Jan .....	18, 142	Wang, Shanxiao.....	141
van den Berg, Gerard .....	249	Wang, Weijin.....	260
van der Land, Victoria.....	306	Wang, Xiaofei.....	217
Van Landschoot, Lisa.....	18	Wang, Yafeng.....	22, 145
Van Lith, Lynn M.....	263	Wang, Zhenglian .....	162
Van Nimwegen, Nico.....	187	Ward, Helen.....	156
Van Raalte, Alyson .....	53	Warren, Charlotte E.....	83
Van Riper, David.....	284	Warvadekar, Janardan.....	289
Van Rossem, Ronan .....	7	Waterhouse, Philippa J .....	290
van Soest, Arthur.....	225	Watson-Jones, Deborah .....	2
Vanderpoel, Sheryl.....	126	Wawire, Salome.....	59, 289
Vandezande, Mattijs.....	219	Wayack Pambe, Madeleine V.....	154, 298
Vanegas, Raul .....	224	Weaver, Emily H .....	294
Vanneman, Reeve.....	51	Webb, Emily .....	289
Varela Petito, Carmen .....	303	Weber, Daniela .....	115
Värnik, Peeter.....	87	Weeks, John R. ....	193
Vasunilashorn, Sarinnapha.....	92	Wegner-Siegmundt, Christian .....	84
Vathukkal Parambath, Shijith .....	116	Wei, Yan.....	304
Vaupel, James .....	223	Wei, Zhou .....	25
Vaupel, James W.....	14	Weinreb, Alexander.....	117, 142, 276
Vause, Sophie.....	257	Weinstein, Maxine.....	84
Veale, Angela.....	196	Weir, Sharon.....	56
Vela-Peon, Fortino .....	8	Wekesa, Eliud.....	126
Vélez Torres, Itayetzy .....	76	Wennemo Lanninger, Alma.....	112
Venkatapuram, Sridhar.....	207	Werdecker, Andrea .....	111
Verdery, Ashton M.....	56	Westerman, Ronny .....	111
Verma, Raj Kumar .....	248	Wheldon, Mark C .....	191
Verma, Ravi .....	9, 133, 151, 164	White, Kari .....	67
Verropoulou, Georgia.....	234	White, Michael .....	6
Vidal, Sergi .....	21, 287	White, Sarahlouise .....	289
Vignoli, Daniele .....	44, 73	Widyantoro, Ninuk .....	263
Viklund, Ida.....	227	Wiedemann, Angela .....	61
Vikström, Lotta .....	122, 185, 307	Wiik, Kenneth Aarskaug .....	227
Villares-Varela, Maria.....	182	Wilde, Joshua.....	8

Willaarts, Bárbara A.....	291	Yinger, Nancy V.....	303
Willaert, Didier .....	6	Yip, Winnie .....	145
Willekens, Frans.....	258	Yoann, Doignon.....	10, 202
Williams, John E. ....	52	Yoon, Soo-Yeon .....	18
Wilson, Ben.....	60, 235	Young-DeMarco, Linda.....	203
Winchester, Joseph Brown.....	98	Yu, Yan .....	29, 155
Winter, Rebecca A .....	194	Yu, Yan-Liang.....	279
Wirth, Heike.....	272	Yun, Sung Hyun .....	75
Wisniowski, Arkadiusz .....	86	Zaba, Basia .....	2, 236
Witoelar, Firman .....	95, 130	Zagarra Vasquez, Rosa Patricia .....	277
Wongboonsin, Patcharawalai .....	4	Zagheni, Emilio .....	192, 229, 272, 288, 307
Wood, Jonas .....	220	Zaitchik, Benjamin .....	277
Woodyatt, Cory R. ....	147	Zaninotto, Paola.....	145
Wu, Zheng.....	60	Zannella, Marina.....	272
Xie, Yu.....	298	Zemlyanova, Elena .....	125
Xie, Zhenming.....	28	Zeng, Xuchun .....	283
Xiong, Qian.....	260	Zeng, Yi.....	122, 162, 223, 249
Y Nguyen, Luong.....	49	Zhang, Benbo.....	254
Yabiku, Scott T. ....	144	Zhang, Fengyu .....	223
Yadav, Deepika .....	121	Zhang, Huanjun .....	114
Yadav, Diwakar.....	27, 83	Zhang, Lei.....	137
Yadav, Suryakant .....	72	Zhang, Li .....	304
Yamarthy, Chandra Sekhar .....	91	Zhang, Yuzhi .....	274
Yang, Bo .....	151	Zhang, Zhenmei.....	279
Yang, Fan .....	230	Zhao, Jiaying .....	84
Yang, Mingxu .....	58	Zhao, Yaohui .....	22, 145, 275
Yang, Peishan.....	100	Zhao, Zhongwei.....	84, 262
Yang, Tse-Chuan.....	202	Zheng, Xiaoying .....	137, 168
Yang, Wen-shan.....	186	Zhou, Junshan.....	91
Yang, Xueyan.....	151	Zhou, Yun.....	253
Yang, Ze.....	223	Zhu, Yu.....	91
Yao, Jing .....	193	Zhukov, Ilya.....	141
Yates, Rachel.....	49	Zimmer, Zachary .....	275
Ye, Yazoume.....	194	Ziraba, Abdhalah K .....	152
Yeatman, Sara .....	230, 273	Zulliger, Rose .....	233
Yeoh, Brenda SA.....	45	Zulu, Eliya Msiyaphazi.....	25, 67, 194, 209
Yeung, Wei-jun Jean .....	95	Zuo, Dongmei.....	77
Yi, Chin-Chun.....	64	Zureick-Brown, Sarah.....	307

