

## Résumés et bibliographie / Abstracts and references

### **The causes and consequences of errors in demographic data**

Thomas W. Pullum (Measure DHS Project, ICF Macro)

The goal of this presentation is to help develop a context or framework for the workshop. It will be structured around three broad themes. The first theme concerns the underlying mechanisms that influence data quality, and the degree to which they can potentially be mitigated. The second theme concerns strategies that are available, after the data become available to the analyst, for identifying errors and making adjustments. The third theme concerns the ultimate uses of the data, after the calculation of rates and indicators, etc., by policy makers and program managers. Most of the workshop will concern the second theme, but the value of methods to assess and adjust data will depend very much on constraints that arise both before and after any demographic or statistical analysis.

Pullum, Thomas W. 2008. *An Assessment of the Quality of Data on Health and Nutrition in the DHS Surveys, 1993-2003*. Methodological Report No. 6. Calverton, Maryland, USA: Macro International Inc.

<http://www.measuredhs.com/pubs/pdf/MR6/MR6.pdf>

Pullum, Thomas W. 2006. *An Assessment of Age and Date Reporting in the DHS Surveys, 1985-2003*. Methodological Report No. 5. Calverton, Maryland: Macro International Inc.

<http://www.measuredhs.com/pubs/pdf/MR5/MR5.pdf>

### **How complete and accurate are siblings' survival histories collected in sub-Saharan countries? Results from a linkage study in Eastern Senegal**

Gilles Pison (Ined)

In most developing countries, estimates of adult mortality are derived from survey data on the survival of a respondent's siblings. While siblings' survival histories are convenient to collect, demographers agree that they may under-estimate the true levels of adult mortality because of 1) sample selection biases and 2) under-reporting of deceased siblings by survey respondents. The extent of under-reporting of deaths in survey-based estimates of adult mortality is however unknown. We use a unique dataset linking survey reports of a sibling's death with prospective records of that sibling's death obtained from demographic surveillance in Eastern Senegal. The data include genealogical information, precise dates of pregnancies, deliveries and deaths collected since the 1970's, as well as information on causes of deaths from verbal autopsies. They allow estimating, for the first time, the completeness of siblings' survival histories collected during retrospective surveys.

S. HELLERINGER, M. KANTE, G. PISON, G. DUTHÉ, A. ANDRO, C. SOKHNA, and J-F. TRAPE. *How complete and accurate are siblings' survival histories collected in sub-Saharan countries? Results from a linkage study in Eastern Senegal*. Paper presented at the 6th African Population Conference (APS), Ouagadougou, 2011.

Quality and comparability of demographic data  
in sub-Saharan Africa

**Sibling survival data in Sub-Saharan Africa: an update on non-sampling errors,**  
Bruno Masquelier (Ined)

Sibling histories are increasingly being used to develop estimates of adult and maternal mortality, especially in Sub-Saharan Africa, where data describing mortality remain scant and defective. However, little is known about recall biases in sibling histories. The only systematic assessment of their quality covered the period 1989-1995 (Stanton, Abderrahim and Hill 2000). It revealed no strong indications of differential quality by sex of siblings or time period before the survey. This analysis did suggest, however, that there is evidence of omissions by older respondents, because the average parity of respondent's mother is invariant or decreasing with the respondent's age. This pattern is apparently inconsistent with recent fertility declines in several African populations. However, an update on non-sampling errors leads to different conclusions. Firstly, declines in the number of siblings by respondents' age are not necessarily a sign of larger recall errors by older respondents. Secondly, there is now strong evidence that the completeness of death reporting declines rapidly as the reference period extends in the distant past, particularly for brothers.

G. Reniers, B. Masquelier, and P. Gerland. "Adult Mortality in Africa" in R. Rogers and E. Crimmins (eds), *International Handbook of Adult Mortality*. Springer, 2011  
<http://papers.ccpr.ucla.edu/download.php?paper=PWP-OPR-2010-002>

**Analysis-oriented longitudinal data management: changing the analytical perspective in DHS and HDSS**

Philippe Bocquier (Centre de recherches en démographie et sociétés, Université catholique de Louvain)

Data formatted for Event History Analysis (EHA) are a powerful basis tool in demography. The biographical file is the foundation of longitudinal analysis and contains the basic demographic events that together define the population at risk and the different risks in the target population. Because building this foundation is not as straightforward as it may seem, longitudinal data from DHS (Demographic and Health Surveys) or HDSS (Health and Demographic Surveillance systems) are usually not offered in an EHA standardized format. Outdated procedures inherited from census or vital registration analysis are still being used. After a reminder of the difference between available data formats, the ability of EHA format to produce both cross-sectional (time-series) indicators and longitudinal indicators that account for left- and right-censoring will be shown. Making EHA format a standard would help harmonizing indicators and adopting procedures that help to avoid a number of common errors in DHS and HDSS analysis. However these improvements in data management imply more training in EHA techniques.

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**Forgotten Marriages? Measuring the Reliability of Retrospective Marriage Histories,**

Sophia Chae (Population Studies Center, University of Pennsylvania)

Lack of suitable data may explain the paucity of studies on marital instability in Sub-Saharan Africa. Ideally, prospective panel data would be used to capture changes in marital status over time. Their scarce availability, however, makes it necessary to use retrospective marriage histories collected in cross-sectional surveys. While researchers typically acknowledge the problems associated with marriage histories, such as recall error, it is unclear to what extent they may affect results. The validity of marriage histories would ideally be measured by comparing marriage histories against public records; however, this is not feasible in this context. An alternative solution is to test their reliability by comparing marriage histories of the same respondent from at least two different points in time. In this paper, I examine the reliability of marriage histories by using data from two waves of the Malawi Longitudinal Study of Families and Health (MLSFH).

Chae, S., *Forgotten Marriages? Measuring the Reliability of Retrospective Marriage Histories*, Paper presented at the 6th African Population Conference APS), Ouagadougou, 2011.

<http://uaps2011.princeton.edu/download.aspx?SubmissionId=110062>

**Comparison of retrospective DHS data on age at marriage in Africa,**  
Solène Lardoux (Département de démographie, Université de Montréal)

The comparison of results of age at first marriage in successive rounds of DHS conducted at different dates for the same country brings us to observe that apparent changes in time may correspond to changes in the implicit definitions (of the population) or explicit (recording by interviewers) rather than to changes in the reality of things. Differences observed between the series undermine the credibility of retrospective data and reveal biases related to the data collection. The question of the continuity of retrospective series will be examined with DHS data from the 23 African countries that carried out at least two rounds of DHS. We will attempt to answer the following questions: can we use retrospective data of successive DHS to tell the trends of age at marriage? Can we bring out patterns of distortion that would attest of a systematic bias, which would allow us to evaluate the extent? Several factors are susceptible to play in the variation of the indicator with the survey: the selection of the surveyed population, the changes in the methodology of data collection, and the biases linked to the declaration of the interviewee (knowledge and screening of information).

Hertrich, V. et Lardoux, S., 2009. « Histoire de la nuptialité en Afrique. Peut-on comparer différentes opérations statistiques pour retracer les tendances longues de l'âge au mariage ? », dans Marcoux, R. (ed.), *Mémoires et démographie. Regards croisés au Sud et au Nord*, p. 204-225. – Laval (Canada), Les cahiers du Cieq, 428 p.

**Trends in age at marriage in Africa. Are census and survey data comparable?**

Véronique Hertrich (Ined)

Most censuses and surveys record the marital status of individuals, thereby providing a cross-sectional measure of women's age at first marriage. With the development of demographic data collection in Africa over recent decades, existing data sources should thus make it possible to track long-term trends in age at marriage in a systematic manner, on the scale of the continent as a whole. But are the data recorded by censuses and surveys truly comparable?

The question is addressed in this paper using statistical tables gathered from 370 censuses and surveys conducted in 55 African countries since the 1950s. Data comparability is first tested by examining the differences between estimates obtained from censuses and from surveys. The profile of the distortions then provides a starting point to explore the factors underlying the differences observed. We focus, in particular, on the bias linked to survey eligibility criteria in populations where exact age may be unknown, and is sometimes estimated on the basis of marital status.

Hertrich, V. et Lardoux, S., 2009. « Histoire de la nuptialité en Afrique. Peut-on comparer différentes opérations statistiques pour retracer les tendances longues de l'âge au mariage ? », dans Marcoux, R. (ed.), *Mémoires et démographie. Regards croisés au Sud et au Nord*, p. 204-225. – Laval (Canada), Les cahiers du Cieq, 428 p.

**Looking for omissions of recent births in birth histories: comparison of three methods**

Bruno Schoumaker (Centre de recherches en démographie et sociétés, Université catholique de Louvain)

Omissions of recent births in demographic surveys can lead to severe underestimation of fertility levels and distort fertility trends. With a few exceptions, classical methods for detecting omissions of recent births (sex ratios at birth, comparison of neonatal and post-neonatal mortality) have suggested that omissions were usually not a significant problem in DHS. In this presentation, we argue that classical methods for detecting omissions of births are not fully satisfying. We present two alternative methods: (1) the first is based on the comparisons of retrospective estimates of the total fertility rate from successive surveys in the same country (Schoumaker, 2011); (2) the second uses the “criss-cross” method which relies on computing fertility rates by comparing parity by age at several points in time (Schmertmann, 2002; Coale, John, Richards, 1985). These methods suggest omissions of recent births are common in sub-Saharan Africa.

Schoumaker B. (2011), “Omissions of Births in DHS Birth Histories in Sub-Saharan Africa: Measurement and Determinants”, Paper presented at the PAA Meeting, Washington D.C., April 2011.

<http://paa2011.princeton.edu/download.aspx?submissionId=112255>

**Changes in proximate determinants and fertility trends in sub-Saharan Africa**

Kazuyo Machiyama (London School of Hygiene and Tropical Medicine)

While several studies assessed recent fertility trends in sub-Saharan Africa, there are few studies which compared the trends with changes in proximate determinants. Using the proximate determinants framework modified by Stover and DHS data from 17 sub-Saharan African countries, this study performed descriptive analysis on changes in proximate determinants over two decades, and compared the TFR trends projected from the framework with the trends obtained from birth histories in our prior studies. The results showed postpartum infecundability played a large role in inhibiting the fertility. Premarital exposure, lower coital frequency within marriage and polygyny were still prevalent, but changes were observed. Although precise projections are not possible, projected TFR trends were generally consistent with the trends from birth histories.

Machiyama, Kazuyo. 2010. *A Re-examination of Recent Fertility Declines in Sub-Saharan Africa*. DHS Working Papers No. 68. Calverton, Maryland, USA: ICF Macro.

[http://pdf.usaid.gov/pdf\\_docs/PNADT374.pdf](http://pdf.usaid.gov/pdf_docs/PNADT374.pdf)