An Analysis of Calendar Data: Examining Contraceptive Use Dynamics and Trends in Eastern Africa

Authors: Peter Kisaakye and Tom A. Moultrie
Affiliation: University of Cape Town

Extended abstract

Introduction

The use of calendar data has become the standard approach for tracking patterns of contraceptive use in the developing world. The use of modern contraception has been suggested to be the surest and probably the only way through which mistimed, unwanted pregnancies, and unwanted fertility can be averted. Effective use of contraception also offers the ability to reduce high rates of induced abortion which compromises the reproductive health of women. However, unlike in the 1970s when family planning services had just been introduced in the developing world (Ali, Cleland and Shah 2012), the evidence from most recent Demographic and Health Surveys (DHSs) suggest that knowledge about contraception is nearly universal in most sub-Saharan African countries. We draw on calendar data from the Demographic and Health Surveys to investigate trends and patterns of contraceptive use dynamics in five East African countries.

Objectives of the study

The principal objective is to assess the contraceptive use dynamics namely (failure, switching, and discontinuation) and the implications they have for women's reproductive behaviour in Eastern Africa. We anticipate that the results will shed more light on contraceptive use, family building strategies and their implications for ongoing fertility transition in Eastern Africa. The study also seeks to understand the long term trend in contraceptive use and how these patterns have changed over time. This will also entail examining the country level effect of the countries under study.

Data and methods

The study considers fertility and contraceptive use dynamics in five East African countries: Ethiopia, Kenya, Rwanda, Tanzania, and Uganda – which are part of the 14 UN-designated East African countries (excluding Indian Ocean states). The study draws on data from 12 National Demographic and Health Surveys (NDHS), with the earliest survey conducted in 2000, in Rwanda and the latest in the year 2011 in Ethiopia and Uganda. The analysis follows a longitudinal approach using datasets that collected calendar data retrospectively for a period of 60 months prior to the date of the survey. We employ an episode-based method to capture periods of uninterrupted use or non-use of a contraceptive method (Ali and Cleland 2010a). The use of nonparametric models such as the discrete-time hazard models will be used to model durations and method use.

The hazard function allows the estimation of the risk of an event occurring in a given period of time.

Rationale of the study

The most important reason for using calendar data is the fact that they offer detailed information about past episodes of contraceptive use, non-use of contraceptives, reasons for discontinuation and patterns of switching (Ali, Cleland and Shah 2003). Also, studies that involve the analysis of contraceptive calendar data offer great potential for understanding family planning needs as well as success of some methods.

It is against this backdrop that this study intends to give a detailed account of the contraceptive use dynamics (namely; method failure, method discontinuation and method switching) in the East African region using all available calendar datasets from the countries selected for inclusion. Specifically, the study will focus more on the discontinuation and the switching patterns as these have been highlighted to be neglected areas in demographic research and in the provision of family planning services in most developing countries (Curtis, Evens and Sambisa 2011). Integrating these aspects into the policy guidelines would help strengthening family planning services in the developing world where unintended pregnancies still pose a health risk to the mothers because of unsafe abortion. Consequently, this could help policy makers to design stronger and better policy formulation guidelines so as to increase the use of contraceptives among women in the region.

Results

Although the most important and major results are yet to be fully produced, available results may suggest lower use of contraception and higher discontinuation rates in Tanzania and Uganda as compared to Ethiopia, Kenya, and Rwanda. The findings provide a basis for a discussion on the implications of reproductive behaviour in sub-Saharan Africa.

Key words: Calendar data, Contraceptive use dynamics, Eastern Africa

References

Ali, MM and J Cleland. 2010a. Contraceptive switching after method-related discontinuation: Levels and differentials, *Studies in Family Planning* 41(2): 129-133. doi: http://dx.doi.org/10.1111/j.1728-4465.2010.00234.x

Ali, MM, J Cleland, and IH Shah. 2003. Trends in reproductive behaviour among young single women in Colombia and Peru: 1985-1999, *Demography* 40(4): 659-673. doi: http://dx.doi.org/10.1353/dem.2003.0031

Ali, MM, J Cleland, and IH Shah. 2012. *Causes and consequences of contraceptive discontinuation: evidence from 60 demographic and health surveys* World Health Organization, Geneva, Switzerland: 1-197. doi:

Curtis, S, E Evens, and W Sambisa. 2011. Contraceptive discontinuation and unintended pregnancy: An imperfect relationship, *International Perspective on Sexual and Reproductive Health* 37(2): 58–66. doi: http://dx.doi.org/10.1363/3705811