Fertility dynamics and contraceptive use in Malawi

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Introduction

The countries that have been described as high fertility in sub Saharan Africa have started to experience a sustained fertility decline. Rising age at marriage and, above all, the spread of contraceptives are the most important factors attributed to the decline. The fertility decline pace however has not been homogenous; with some parts of the world experiencing a faster decline than others. In Malawi, a woman's average fertility (TFR) has declined by only one birth, from 6.7 to 5.7 children in the last three decades. At the same time Malawi has witnessed a remarkable increase in modern contraceptive use among currently married women (CPR), from 7.4% in 1992 to 42.2% in 2010.

This study examines trends in the proximate determinants of fertility in Malawi during the period 2000 to 2010 with the view to explain their relative contribution to overall fertility level. Two objectives are pursued; first to describe the fertility levels and trends among women of different demographic and socio-economic characteristics. The second objective is to document trends in the proximate determinants of fertility (postpartum infecundability, contraception and proportion married). In doing so, the study intends to address the following question: what is the relative contribution of proximate determinants to the observed fertility level in Malawi at each point in time between 2000-2010 surveys?

It is anticipated that the study will make a contribution to the understanding of the mismatch between TFR and CPR thereby revealing the subtle strategies women employ to control fertility. This is important for areas that require intervention for policy and program effort in order to achieve lower fertility rates in Malawi.

Data and methods

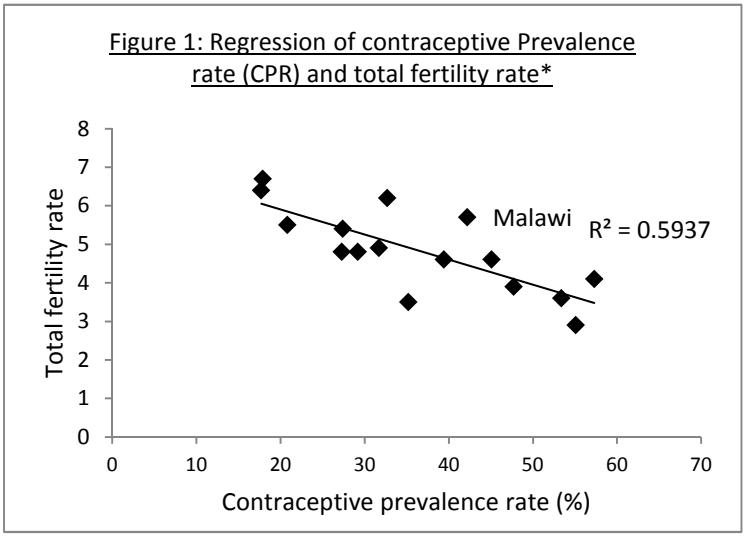
The study uses data from 2000, 2004 and 2010 the Demographic Health Surveys (MDHS) to answer the research questions. Total fertility rate (TFR) is the main measure being used in this study. There are several advantages of using MDHS data; it is the only nationally represented data that is used by policymakers to evaluate the demographic and health status of the country's population. Secondly, because surveys are conducted every five years, it allows levels and trends in variables of interest to be measured. Thirdly, Malawi offers an excellent example to study fertility because Malawi is one of the countries with highest TFR in the region.

Based on reported birth history, we reconstruct age period specific fertility rates that enable us to examine past fertility trends. A *tfr2* programme developed by Pullum and Schoumaker (2012) is used to examine levels, patterns of age specific fertility rates (ASFRs) across different age cohorts for population subgroups from various socio-economic backgrounds. Next, the inhibiting influence of each proximate determinant on fertility is explored in detail by analysing the proximate determinants of fertility using the framework developed by

Bongaarts and Potter (1983). Because previous studies in the region have shown that proportion married, marital and non-marital fertility (Harwood-Lejeune, 2000) and urbanisation (Shapiro and Gebreselassie, 2008) and level of education (Bongaarts, 2003) are the factors most closely associated with fertility decline, the study decomposes the change in fertility between 2000 and 2010 into a component attributable in the composition of the population and a component attributable to changes in group-specific TFR (Kitagawa, 1955; Preston et al., 2001; Romo, 2003). This approach enables us to distinguish the relative contribution according to the impact of each underlying variable as well as examining the additive contributions of the different components. All analyses were conducted using STATA version 12 which is able to account for the complex stratified multistage cluster sampling. The analyses applied weights to correct for the unequal probabilities of selection for households and individual women.

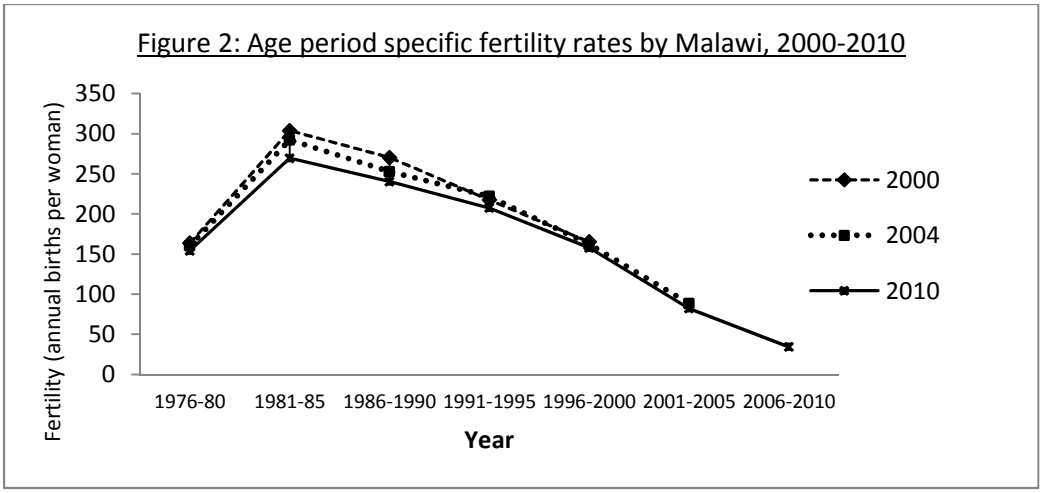
Results

A regression of the relationship between contraceptive prevalence and total fertility level in all countries with the most recent survey in eastern and Southern African countries shows that for Malawi's CPR of 42.2%, its TFR must be 4.5.



*Countries were drawn from sixteen countries from Eastern and Southern Africa but exclude Sudan.

Figure 2 shows that in Malawi, the difference in total fertility across the surveys is 0.7. There is similarity in age period specific fertility rates (APSFR) across the surveys with the exception of 2010, APSFR rates are slightly lower among women in the middle age group (20-34 years). Lower fertility levels in this age group may suggest birth deferment. Fertility control is practiced by use of less effective methods to ensure appropriate intervals between births as women reach their fertility goals. On the other hand, fertility at older age group remains high which implies there is no serious efforts to reduce high order births. The above scenario is observed in Figure 4 which shows that women in Malawi exhibit the same tendency as women in other sub-Saharan countries, to rely on temporary methods (injectables) compared to permanent methods (sterilisation).



It is also noted in Figure 3 that total marital fertility in Malawi has remained above six children per woman marital, only declined by one half of a child in the last decade. While it is encouraging that non-marital fertility has remained fairly stable at low levels, the proportion of women who are married is low such that it has little effect to reduce fertility.

Table 1 shows the results of the analysis of the elements which, if changed, would causally result in a change in overall fertility levels, all else being equal (Bongaarts, 1978).

Table1: Indices of proximate determinants of fertility by survey year, Malawi

				Relative change	
	2000	2004	2010	2000:2004	2004:2010
Proportion married (C_m)	0.72	0.71	0.67	1.0	0.9
Mean ideal number of children	5.0	4.1	4.0	0.8	1.0
Median age at marriage (20-49)	17.9	18.0	17.9	1.0	1.0
Postpartum infecundability (PPI)	16.1	15.0	14.9	0.9	1.0
Proportion using					
Any contraception	0.31	0.33	0.46	1.1	1.4
Modern contraception (*u*)	0.26	0.28	0.42	1.1	1.5
Average use effectiveness (*e*)	0.91	0.91	0.91	-	-
contraception (C_c)	0.70	0.68	0.55	1.0	0.8
Postpartum infecundability (C_i)	0.58	0.60	0.60	1.0	1.0
TFR (Observed)	6.35	6.04	5.71	1.0	0.9

- = Not applicable,

Cc= 1-1.08*e*u.

Ci=20/(18+i), where I is the length in months of Postpartum Infecundability

These include; proportion in union (C_m), index of contraception C_c, postpartum infecundability (C_i) and abortion (C_a). Abortion is restricted by law in Malawi and is not considered in this study. The indices range from 0 to 1; the closer the index it is to zero, the more influential the associated proximate determinant is in reducing fertility from its maximum potential. There have been modest declines in values for all three indices suggesting that the pregnancy-preventive effects of all the proximate determinants were less pronounced to contribute to substantial fertility decline.

Table 2 shows that level of education (41.6%) accounted for the most fertility decline between 2000 and 2010. Because of small composition, the relative contribution of education on fertility decline is less pronounced. In 2010, only 14.6% of women attained secondary and higher education in Malawi and one in three women (33%) still lacks basic literacy skills (not shown here). The persistence of low literacy among women is a critical concern as women's education attainment lowers fertility level through decreases in the demand as well as supply of children in a household (Bongaarts, 2006).

Table 2: Decomposition of TFR by selected background characteristics

Variable	Compositional difference	Group specific difference	Total Difference
Urban/rural	0.04(6.3%)	0.57(93.7%)	0.60 (100%)
Education	0.25(41.6%)	0.35(58.4%)	0.60 (100%)
Region	0.01(0.9%	0.60 (100%)	0.60 (100%)
Wealth index	0.04(7.2%)	0.56(92.8%)	0.60 (100%)

Preliminary summary

Because of low contraceptive prevalence rate (7.2%) in the 1992 survey, previous studies (Cohen, 1998; Harwood-Lejeune, 2000) attributed rising age at marriage as the most important factor for fertility decline in Malawi. Using three surveys, we show that the level of education through its effect of shortening the window of childbearing accounts for decline in fertility, though the change is modest. The high marital fertility rates with little evidence of decline, determine high total fertility rates in Malawi. As it is the case in other regions, injection is the predominant method of contraception suggesting a tendency by women to use it spacing rather than for limiting births. Further, the dominance of one family planning method restricts choices thereby constraining the opportunity of couples to obtain a method that suits their needs. Meaningful fertility decline can occur if efforts are directed towards improving those aspects of social and economic development which favour fertility decline such as increasing age at marriage, raising the status of women and female literacy.

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