ETHNIC FERTILITY DIFFERENTIALS AND THEIR PROXIMATE DETERMINANTS IN KENYA: IMPLICATIONS FOR DEVELOPMENT

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Abstract

Kenya has been experiencing a fertility stall after decades of very high fertility levels. In Kenya as in many African countries, ethnic identity/belonging has become a much stronger attribute than the wider national identity as evidenced by the post election violence of 2007. Numbers play a role in the above equation. Further, Kenya has been experiencing a fertility stall in recent years as such it is important to determine the drivers of fertility differentials in the country as the national average tends to mask these. This paper examines ethnic differentials in fertility in Kenya using data from the Kenya Demographic and Health Survey (KDHS, 2003). Direct and indirect measures of fertility were employed in estimation of fertility levels for each ethnic group. Descriptive and proximate determinants analyses were employed to establish the influence of fertility-inhibiting effects of the indices of marriage, contraceptive use and postpartum infecundability by ethnic group on overall fertility by ethnic group. The results indicate that the Total Fertility Rates (TFR) for the core ethnic group, range from 3.35 among the Kikuyu to 8.77 among the Masai. Overall, the pastoral and nomadic communities (including the Masai, Kalenjin, Somali and Turkana) had the highest fertility rates that are well above the national average. The index of marriage had the greatest fertility inhibiting effect for the majority of the ethnic groups with the exception of the Masai and Kuria where the index of postpartum infecundability had the strongest effect. The index of contraception which has been touted as having the greatest fertility-inhibiting effect for the country is only applicable to ethnic groups with a low fertility namely Kikuyu and Embu.

Key Words: Fertility, Ethnicity, Proximate determinants, marriage, Contraceptive, Postpartum Infecundability

Introduction

Declines in fertility over the past three decades have been hailed as the most significant demographic change in the world (UN 2002). The UN population division report observes that since 1970-1975, world fertility declined by 37 percent from 4.5 births per woman to the 1995-2000 level of 2.8 births per woman. Kenya has not been left behind in the above declines. A lot has been written on Kenya's dramatic fertility transition (Blacker, 2005; Westoff and Cross, 2005; Bongaarts, 2005). In the period 1975-1978 Kenya had the highest fertility rate in the world of 8.1 births per woman this has since declined to 4.6 births per woman (KNBS 2010, Preliminary Results KDHS, 2008). Blacker et al., 2005 observed that between 1980 and 2000, total fertility in Kenya fell by 40 percent.



The figure below shows the dramatic decline in Kenya's fertility rates over time.

These dramatic declines have been attributed mainly to an increase in contraceptive use and age at first marriage (Blacker, 2005) and stalls in fertility preference as measured by wanted total fertility (Bongaarts, 2005). This is however with reference to national averages that tend to mask the real differentials in fertility levels among subgroups in the country. This Paper aims to examine ethnic differentials in fertility and their proximate determinants in Kenya using KDHS 2003 with a view to showing that dramatic reductions in fertility in the country have only occurred among a few ethnic groups mainly those living in Central and Eastern parts of the country. The paper posits that future declines in fertility in the country will depend largely on interventions among subgroups whose fertility levels are in the region of

Source: Various Surveys

the country's levels in the late-seventies and eighties. Figure 2 below shows Trends in Total fertility by ethnic group in Kenya, 1989 1998, and 2003:



Source: Derived from KDHS DATA, 1989, 1998 and 2003 (The 2003 includes some ethnic groups such as Masai with a TFR of 8.8, Somali 6.7, Turkana 6.6 and Kuria 5.4 under other).

Figure 2 indicates that, whereas there have been declines in total fertility among the ethnic groups the pattern of decline is not similar to the national pattern in figure 1. The figure shows that the majority of the ethnic groups still have higher fertility than the national average of 4.6 currently. It is therefore important to determine factors that are responsible for high fertility rates among the majority of the ethnic groups in Kenya.

The interest in ethnic fertility differentials in Kenya stems from the fact that it has become a very powerful factor in Kenya as was witnessed during the post election violence of 2007. In Kenya as in many African countries, ethnic identity/belonging is a much stronger attribute than the wider national identity. Numbers therefore play a crucial role in this regard. Eriksen (1993) observes that thirty five of the thirty-seven armed conflicts in the world in 1991 were internal conflicts most of which can be described as ethnic conflicts. "The term ethnicity refers to relationships between groups whose members consider themselves culturally distinctive" (Eriksen, 1993).

Ethnic variations in reproductive outcomes in developing countries including Africa have been a subject of interest to scholars and policy makers. This is partly because societies are structured among other characteristics, by ethnic groups from which individuals derive their fundamental identities and values. Studies indicate that individual's cultural attachment and identity may determine behaviour including reproduction (Bauni et al, 2002). It has been argued that higher fertility is one of several indicators of deprivation and social exclusion among minority communities. This has been observed in studies carried out in Vietnam and Bolivia (Amin s and Teerawichichainan, B, 2009; McNamee, CB, 2009).

Objectives:

General Objective:

The main objective of the study is to examine the nature and patterns of fertility differentials among ethnic groups in Kenya

Specific Objectives

- 1. Estimate levels of fertility for the core Ethnic groups in Kenya
- 2. Establish factors that may be responsible for the differentials

Research Questions:

- 1. What are the levels of fertility by ethnic group in Kenya?
- 2. What factors are responsible for the differentials?

Data and Methods

The paper is based on the 2003 Kenya Demographic and Health Survey that was conducted by the Kenya National Bureau of Statistics in collaboration with Macro International. The data is from a nationally representative sample of women from most of the ethnic groups in the country. The estimation of fertility levels is based on information collected from birth histories of the women and children ever born by ethnic group. The ethnic groups considered in the paper are the core groups such as Kikuyu, Luyia, Luo, Kalenjin, Masai, Kisii, Kamba, embu, Meru, Somali, Turkana, Mijikenda/Swahili, Taita/Taveta and Kuria. Estimation of fertility levels was done by using person-period data where by birth histories are organized as person-period data file (See Schoumaker, B, 2006 for details). An SPSS program developed by Macro International based on chapter 3 of the DHS report Guidelines of October 30, 1994 - Version 5.0.1 of 10/05/95 was used for the estimation of total fertility rates by ethnic groups applying the method suggested by Schoumaker, 2006. The program factors in all women weighting factors. The Brass P/F ratio method (Trussell variant) was used for the adjustment of the TFRs.

Bongaart's Model (Bongaart 1978) of proximate determinants is used to decompose fertility rates for each of the fourteen ethnic groups used in the analysis. The following formula depicts Bongaart's model:

 $TF = TFR (C_m * C_c * C_a * C_i)$

Where C_m is the index of proportion married

 $C_{\rm c}$ is the index contraception

 C_a is the index abortion (which is not considered in the Kenyan situation due to lack of data) C_i is the index postpartum infecundability

TF is the total fecundity rate (Assumed be between 13 to 17 months). However this varies from country to country.

Results

In the KDHS 2003, the ethnic groups displayed in Table 1 were included in the survey. Unlike the previous surveys of 1989 and 1998, the survey included Somalis, Turkanas and Kuria's as separate entities. The results indicate that among the women that were interviewed, the majority were Kikuyu, followed by Luyia, Luo, kamba, Kalenjin, Somali, Mijikenda/Swahili respectively.

Ethnic Groups	Number	Percent
Embu	101	1.2
Kalenjin	643	7.8
Kamba	786	9.6
Kikuyu	1977	24.1
Kisii	454	5.5
Luhya	1229	15.0
Luo	853	10.4
Masai	162	2.0
Meru	386	4.7
Mijikenda/swahili	566	6.9
Somali	602	7.3
Taita/Tavate	135	1.6
Turkana	121	1.5
Kuria	47	.6
Other	133	1.6
Total	8195	100.0

Table 1: Percent distribution of Ethnic groups, Kenya2003

Source: KDHS, 2003

Given the cultural diversity of the different ethnic groups, the results will be presented separately for each group; however, reference will only be made to the women that were interviewed because of the small numbers for some ethnic groups.

Table 2 and figure 3 show the reported and adjusted total fertility rates and mean number of children ever born by ethnic groups estimated from birth history data and children ever born.

Ethnic Group	Reported TFR	Adjusted TFR	Mean Children Ever Born		
		(P/F) Ratio Method			
Embu	3.4	3.8	3.4		
Kalenjin	6.2	6.2	5.3		
Kamba	4.9	5.7	5.1		
Kikuyu	3.4	3.7	4.1		
Kisii	4.6	4.8	4.3		
Luhya	5.3	5.5	5.1		
Luo	5.5	5.8	5.7		
Masai	8.8	7.9	6.6		
Meru	3.6	4.1	4.4		
Mijikenda/swahili	5.4	5.9	5.6		
Somali	6.7	8.2	6.3		
Taita/Tavate	3.4	5.4	4.5		
Turkana	6.6	7.3	6.6		
Kuria	5.4	8.4	5.6		

Table 2: Reported and Adjusted Total Fertility Rates and Mean Number of childrenever born by ethnic groups for 2003 Kenya Demographic and Health Survey

Source: Calculated from KDHS 2003 Data



The pattern displayed in figure 3 above indicates that the adjusted fertility rates are higher for all ethnic groups except for the Kalenjin that is the same as the reported and the Masai that was adjusted downwards. This implies that there may have been underreporting of births for the majority of the ethnic groups. However among the Masai there may have been over-reporting of births. The differences could also be as a result of the numerator for the reported and adjusted rates. The reported TFRs were based on births for 36 months prior to the survey while the adjusted TFRs are based on all children ever born. The important thing to note however is that the fertility rates for the majority of the ethnic groups are higher than the national average of 4.6 and that only a few ethnic groups have fertility levels that are below the national average namely Kikuyu, Embu, Meru and Taita/Taveta.

These results are consistent with the findings of a study carried out by Anyara and Hinde, 2006. The study analysed regional fertility patterns in Kenya. The findings showed that fertility was lowest in urban areas and in central province represented by Kiambu, Murang'a, Nyeri, Kirinyaga and Nyandarua districts and parts of eastern province represented by Embu and Meru (This is in reference to the 2003 KDHS Survey). In this study the ethnic groups that inhabit those districts are Kikuyu, Embu and Meru. Conversely, fertility is highest

among ethnic groups inhabiting parts of Rift Valley namely Narok/Kajiado (Masai), Baringo/Laikipia/West Pokot/E.Marakwet and Kericho (Kalenjin,), Turkana (Turkana) North Eastern Province (Somali), Western Province mainly inhabited by the Luyia is represented by the old Kakamega and Busia Districts, Coast province is inhabited mainly by the Mijikenda and Swahili is represented by Kwale, Kilifi and Mombasa while Nyanza province inhabited mainly by the Luo, Kisii and Kuria is represented by Kisii, Kisumu, Siaya and South Nyanza. Also some parts of Eastern Province inhabited by the Kamba depict high fertility levels above the national average. The question one may ask is what are the factors that determine such high levels of fertility among the ethnic groups?

Proximate Determinants of Fertility by ethnic group in Kenya

Age at Fist Marriage

As earlier stated, the dramatic declines in fertility in Kenya have been attributed to an increase in contraceptive use and increase in age at marriage. Indeed age at first marriage has been rising over the years in the country generally. According to Blacker et al, 2005 who calculated Singulate Mean age at marriage (SMAM) for five censuses and five large scale surveys for Kenya concluded that during the last 30 years of the twentieth century, mean age at first marriage rose by two and half years. An examination of mean age at first marriage by ethnic group shows a consistent pattern with the fertility rates. The ethnic groups with low fertility also have higher mean age at marriage while those with the highest fertility rates have lower age at marriage.

Ethnic Group	Mean Age at First marriage
Embu	20.7
Kalenjin	18.3
Kamba	19.8
Kikuyu	20.3
Kisii	18.9
Luyia	18.8
Luo	17.7
Masai	17.0

Table 3:	Mean age	at Marriag	e by Ethnicit	ty in Ken	va 2003
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Meru	20.2
Mijikenda/Swahili	17.2
Somali	17.4
Taita/Taveta	20.3
Turkana	18.2
Kuria	16.9

Source: Derived from KDHS, 2003

Trends in Contraceptive Use

Generally, contraceptive use in Kenya has been on the increase since 1977-78 Kenya fertility Survey which showed the proportion of women using any method and modern methods to be 9.2 and 5.9 respectively and KDHS 2003 which indicated that the proportion of women using any method was 39.3 and out of these, 31.5 were using modern methods (Blacker et al, 2005). A detailed analysis on trends in contraceptive use in Kenya was carried out by Westoff and Cross, 2005 where they compared the 1998 KDHS and 2003 data. They concluded that there has been a plateauing of contraceptive prevalence for all women in 2003 KDHS compared with 1998. The results indicate that the proportion of all women using any method increased from 26 percent in 1993 to 30 percent in 1998 and remained unchanged in 2003. Further the prevalence of modern methods also stagnated at 24 percent.

However, when this is applied to the ethnic groups a different picture emerges. Table 4 below shows trends in use of any contraceptive method by currently married women (Including those cohabiting) and method used.

Ethnic Group	Never Used	Folkloric Only	Used only trad. meth	Used modern method	Total	Number of Women
Embu	11.3	-	1.9	86.8	100.0	53
Kalenjin	46.4	.2	11.6	41.7	100.0	405
Kamba	24.9	.2	18.9	56.0	100.0	450
Kikuyu	12.9	.1	6.9	80.1	100.0	1054
Kisii	20.2	.4	2.9	76.5	100.0	277
Luyia	28.7	1.2	6.9	63.2	100.0	728
Luo	52.4	.4	7.4	39.8	100.0	515

Table 4: Percent distribution of currently married women, by use of any contraceptive method currently used, Kenya, 2003

Masai	66.7	-	21.1	12.2	100.0	123
Meru	14.5	-	4.2	81.3	100.0	214
Mijikenda/Swa	61.0	.5	3.8	34.7	100.0	374
Somali	94.8	.2	.5	4.5	100.0	423
Taita/Taveta	20.0	1.5	16.9	61.5	100.0	65
Turkana	82.1	2.4	3.6	11.9	100.0	84
Kuria	50.0	-	11.1	38.9	100.0	36
Other	33.8	1.3	7.8	57.1	100.0	77
Total	41.3	0.8	8.4	49.7	100.0	4876

It can be observed that those ethnic groups that have high fertility rates also have low use of any contraceptive methods especially modern methods which are considered to be more effective. This pattern persists even when background characteristics of the women are considered (see appendix for details). The pattern displayed here indicates that whereas increase in contraceptive use has been touted as being one of the major factors in fertility decline and stall in Kenya over the years (Blacker et al, 2005, Blacker 2005, Westoff and Cross 2005) it can only explain fertility declines among some ethnic groups while other reasons need to be sought for the low use and subsequent high fertility rates among some ethnic groups. In a study on reproductive health needs assessment of the internally displaced persons in selected sites in Kenya (UNFPA, 2003) among the Masai it was reported in a focus group discussion that *"Few people practive the modern methods while the rest use traditional methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their diildren. On traditional methods the upper Methods to space their due to the upper Methods.*

Postpartum infecundability

It has been argued that postpartum infecundability has not contributed substantially to the overall fertility decline in the country (Blacker, 2005). This consists of mainly the practices of breastfeeding and sexual abstinence after the birth of a child and said to reduce a woman's exposure to pregnancy through the delay of return of a woman's normal pattern of ovulation (Brass and Jolly, 1993). This is where cultural norms may play a big role in prescribing the limitation of sexual relations after birth. In a study on reproductive health needs assessment of the internally displaced persons in selected sites in Kenya (UNFPA, 2003) it was reported in a focus group discussion among the Masai that: *"The umen keep long hair and dild also keeps*

long hair as long as it is breastfeeding. The mother also stays dirty in order to keep her husband off" (pg.66). This illustrates the role of cultural practices in fertility regulation.

Abortion

In Kenya, abortion is illegal as a result information is scarce or non-existent and is measured by the values used by Bongaarts in 1978.

Pathological Sterility

According to Blacker, 2005, Kenya has never been a country with high prevalence of pathological sterility. There are however some exceptions especially among some coastal areas in the 1950s. Subsequent surveys have shown a sterility level of 3 percent for women aged over 30 years.

Ethnic Groups	C _m	C _c	C _i	C _a	TF	TFR
Embu	0.36	0.55	0.66	1.000	25.9	3.4
Kalenjin	0.57	0.91	0.67	1.000	17.9	6.2
Kamba	0.48	0.80	0.65	1.000	19.4	4.9
Kikuyu	0.37	0.60	0.67	1.000	22.8	3.4
Kisii	0.49	0.77	0.67	1.000	18.1	4.6
Luyia	0.53	0.86	0.68	1.000	17.3	5.3
Luo	0.58	0.95	0.71	1.000	14.0	5.5
Masai	0.76	0.96	0.70	1.000	17.1	8.8
Meru	0.46	0.61	0.61	1.000	21.1	3.6
Mijikenda/Swahili	0.60	0.96	0.66	1.000	14.1	5.4
Somali	0.70	1.00	0.74	1.000	12.8	6.7
Taita/Taveta	0.34	0.76	0.65	1.000	20.6	3.4
Turkana	0.42	0.99	0.67	1.000	24.0	6.6
Kuria	0.84	0.99	0.67	1.000	9.8	5.4
	1	1	1	1		

 Table 5: Proximate Determinant Indices for Ethnic Groups in Kenya, 2003

The index measuring marriage patterns on fertility by ethnic group is denoted as C_m. It takes the value of 1 if all women of reproductive age are in union and 0 when none are in union. As can be observed from the table 5, the effect of marriage patterns on fertility in 2003 KDHS for the majority of the ethnic groups had the strongest fertility inhibiting effect. However for the Masai (whose TFR was highest) and Kuria, the index of postpartum infecundability had the strongest inhibiting-fertility effect. The index of marriage had the greatest effect for the Kikuyu, Embu, Taita/Taveta, Meru, Turkana, and Kisii. This is consistent with findings from a number of studies on Kenya that have attributed the decline in fertility to be as a result of an increase in age at first marriage for the majority of the ethnic groups (Brass and Jolly, 1993; Blacker, 2002; Blacker et al, 2005; Westoff and Cross, 2005).

The index of Contraceptive use denoted by C_c was the second strongest fertility inhibiting factor for the Embu and Kikuyu while postpartum infecundability played second greatest role in fertility inhibition for the majority of the ethnic groups. Surprisingly the role of

contraceptive use as a major factor in fertility decline in Kenya appears to be negligible for the majority of the ethnic groups. For example among the Somali, Turkana, Kuria, Luo, Masai and Kalenjin, the index of contraceptive use had no effect or minimal effect in fertility inhibition. These are also the ethnic groups which had the highest fertility levels in 2003.

Discussion

The objective of this study was firstly to estimate fertility levels by ethnic group in Kenya using data from the Kenya Demographic and Health survey of 2003. Secondly the study set out to establish the proximate determinants and their role in accounting for ethnic differentials in fertility. Fertility levels for the majority of the ethnic groups in the country are higher than the national average of 4.9 in 2003 and 4.6 in 2008. The highest levels of fertility were experienced among the Masai, Somali, Kalenjin and Turkana who are predominantly pastoralists and nomadic. With the exception of the Somali and Turkana who were included in the 2003 for the first time, the results of this study are consistent with those of the regional differentials in fertility that was carried out by Anyara and Hinde 2006. In this study the findings were that increases in fertility levels were more pronounced in Narok/Kajiado and Baringo regions which are inhabited mainly by the Masai and Kalenjin subgroups.

One of the common characteristic of these sub-groups (including the Somali) is that they generally practice early marriage and female genital mutilation (FGM). In a country study carried out by UNICEF (2008), some of the reasons given for FGM were that it is a cultural and traditional practice that is deeply entrenched in these communities. Marriageability was one of the core reasons for such practice. It is believed that if a woman or girl has not gone through the practice of FGM she cannot get married. Hence in some of these communities once a girl has been circumcised she has to get married regardless of her age. Early marriage of course signals early child bearing which is likely to influence fertility levels.

The subgroups with low fertility (below the national average) are those where age and marriage and contraceptive use have played a role in their fertility levels. These is mainly among the Kikuyu, Embu and Meru, hence the usual description of Kenya's fertility transition being influenced by increases in age at marriage and contraceptive use may be applicable to these ethnic groups. Socio-economic development may also have played a role

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in fertility levels of these subgroups due to their being in resource rich areas with a high Human Development index (UNDP, 2002) as opposed to the pastoralist communities who inhabit arid and semi arid areas.

The main fertility inhibiting effects in the regions of high fertility are mainly postpartum infecundability (Masai and Kuria) who both practice FGM. While for the Somali the index of marriage and postpartum infecundability are the core fertility inhibiting factors. The index of contraception has no effect among the Somali and only a negligible effect among the Turkana, Kuria, and Luo.

Conclusion

It is clear from the analysis that fertility levels in Kenya are still high more specifically when analysis is done at regional and subgroup levels. The national average tends to mask variations in fertility levels which are consistently higher among the majority of the ethnic groups. Further when national averages are used, the variations in the fertility inhibiting effects of proximate determinants such as postpartum infecundablity are lost. If Kenya's fertility transition is to continue and even go lower than where it has currently stalled focus has to shift from looking at national averages to lower estimates of fertility at regional and sub group levels.

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