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RELIGION AND REPRODUCTIVE BEHAVIOR IN SUB-SAHARAN AFRICA

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Abstract

With growing public interest in Muslim and Christian relations in sub-Saharan Africa, this paper explores differences in fertility across countries by religion in countries with a sizeable population of Muslims and non-Muslims. Using Demographic and Health Survey data from 29 countries, we calculate various measures of fertility and family planning by country and religion, as well as analyze the association of religion with fertility, age at marriage, limiting desires, and contraceptive use, controlling for other socioeconomic variables. We begin our analysis by looking at the three largest religious groups in sub-Saharan Africa: Muslims, Catholics, and other Christians, and find that in most countries included, Catholic and other Christian women do not differ greatly in fertility related characteristics. However, Muslim women have higher fertility and fertility-related characteristics than non-Muslims in almost all countries.

Introduction

Research on the effects of religion on reproductive behavior has had a long history in the social sciences. Most of that research has concentrated on developed countries though in recent years, the focus has included developing countries (Jones, 2006; Morgan et al., 2002; Roudi-Fahimi, 2004; Boonstra, 2001; Akafuah, 2008; Dharmalingam, 2004; Knodel et al.,1999; Karim, 1997; Immerman, Ronald, 2003, and others). Most recently, sub-Saharan Africa has become an object of attention (Heaton, 2011; Johnson-Hanks, 2006; Kahle, 2013) The most relevant publication in the group for this research is Tim Heaton's article in 2010: "Does Religion Influence Fertility in Developing Countries" based on data for 30 countries including 17 from sub-Saharan Africa. His study documents little difference in fertility between Catholics and Protestants in that part of the world but substantially higher fertility among Muslims. His analysis concludes that the level of development and various social characteristics do not fully account for the Muslim factor in fertility. As will be seen in the following analysis, similar findings remain for more recent and more extensive data.

Population Composition

The composition of religions in the sub-Saharan African countries included in this report is summarized in Table 1. In many of the countries of West and Central Africa, Muslims are the largest subgroup; they comprise almost the entire populations of Mali, Niger and Senegal. In general, the remaining two large populations are Catholics and a variety of other Christian denominations grouped in this paper as Other Christians.

In eastern and southern Africa, women classified as Other Christians predominate with Catholics next. Muslims are a distinct minority in this region not exceeding 30 percent and typically falling below 10 percent. In Ethiopia, 47 percent identify as Orthodox.

Sources of Data

The 30 countries in Table 1 comprise those in sub-Saharan Africa with Demographic and Health Surveys conducted in the past ten years (from 2004). The religious identification is based on a single simple question "What is your religion?" The various categories were pre-coded in the interview questionnaire based on local knowledge in each country.

No other information on the subject was obtained. It is particularly unfortunate that there is no information on religiousness which would be an important component of the general topic. The available data on religion are obviously very limited. Our groupings of religion, particularly in the Other Christian category, are crude in not differentiating various denominations but such a grouping is necessary to permit inter-country comparisons.

Fertility

In Figures 1a and 1b, Total Fertility Rates (TFR) are shown for the three major religion categories in two geographic regions of sub-Saharan Africa. The calculation of the TFR requires large samples of women since it depends on reliable denominators of women in each of the seven five-year age categories, so that only Catholics, Other Christians and Muslims can be used. There is very little difference in West and Central Africa in the TFRs (Figure 1a) for Catholics and Other Christians while the Muslim fertility rates are typically though not universally higher.

In Eastern and Southern Africa countries (Figure 1b), the fertility rates of Catholics and Other Christians are also close and Muslim fertility higher except in Tanzania[1] and Uganda.

The fertility estimates in Table 2 are different from the TFRs in that they are based on currently married rather than on all women and are simple averages of the number of births in the past five years uncontrolled for age. This fertility measure does not require the larger samples needed for the TFR and therefore can include some other religions as well as the three major groups. Estimates of fertility for women who say they have no religion tend to be on the high side which is quite the opposite pattern than observed in the more developed countries. There is no obvious explanation for this though these women are less educated than women with specific religious affiliations. They are also based typically on small numbers of women.

[1] The estimates for Tanzania are based on a 2004 survey rather than the more recent 2010 survey when the question on religion was not included.

Considering the similarity of Catholic and Other Christian fertility, the generally higher fertility of Muslims, and the small number of members of other religions, the main focus of the following analyses is confined to Muslim and non-Muslim comparisons. The difference in the TFR between these two groups is summarized in Figure 2 for countries with some Muslim populations. Countries with small numbers of Muslims – Congo,Brazaville, Congo Democratic Republic, Burundi, Madagascar, Rwanda, Zambia and Zimbabwe – are excluded from further analyses. The higher fertility for Muslims is the predominant pattern but there are several exceptions. In Chad the reverse is seen but this picture is ten years old[2]. A similar difference is found in Tanzania in 2004. In Mali in 2012-13, the TFR for Muslims (92 percent of the population) was 6.5, lower than that for non-Muslims at 7.2[3].

Recent trends in the TFR for Muslims and non-Muslims are shown in Figure 3. The most common pattern is for the rates for both populations to be moving, more or less, in the same direction. There are exceptions to this, however, in Chad, Ghana and Malawi where Muslim fertility seems to be rising in contrast to the rates for non-Muslims. In Niger and Senegal, where Muslims comprise almost the entire populations, the trends are in opposite directions with a uniform decline in Senegal and a recent increase in Niger to a TFR of 7.6 from 7.1 five years earlier. In Tanzania, Muslim fertility has been the lower of the two and declining.

Research on the association of religion with reproductive behavior typically considers both formal belief systems as well as differences in the social and economic composition of the members of various religions (Voas, 2007). Some religions may carry particular views, for example on the practice of contraception and abortion, and on marriage and the family. In the present study, the comparisons of Muslims and non-Muslims is so limiting that the focus will be on the connections with different covariates of this dichotomy such as education, wealth, child mortality, and polygyny. (Regenerus and Smith, 2005; Watkins and Ina Warriner, 2003). There is no belief system in Islam that forbids contraception (Boonstra, 2001; Karim,1997; Weeks, 1988; Roudi-Fahmi, 2004) though some local religious leaders may believe otherwise, while the non-Muslim category is so broad as to preclude singling out specific denominations.

Plan of Analysis

The primary objective of the following analysis is to determine whether the tendency for Muslim women in sub-Saharan Africa to have higher fertility than non-Muslims (see Figure 2) reflects differences in age at marriage, number of children desired,

[2] An earlier study of the differences in fertility of Muslim and non-Muslim populations of West Africa (Johnson-Hanks, 2006) showed a generally similar picture with fewer and earlier surveys. The more recent data reviewed here do not support her conclusions about the differences in fertility related to whether Muslims are a minority or a majority of the population.

[3] Muslim fertility in Mali is higher than that of the Other Christian group as shown in Figure 1A but lower than the larger category of non-Muslims as indicated in Figure 2. This is because of the higher rates for Animists and women in other Traditional religions.

contraceptive use, and child mortality. We explore the socio-economic covariates of these antecedents of fertility to see whether they account for the Muslim – non-Muslim differences. We begin with nuptiality.

Nuptiality

An important component of the higher fertility of Muslims lies in the greater proportion of women currently married which is related to their early age at marriage. In the Arab world, a significant part of the decline in fertility is due to changes in nuptiality (Rashad, 2000, 2005). In the 18 countries of sub-Saharan Africa included in Table 3, every country except Tanzania in 2004 shows higher proportions of Muslims currently married. Earlier age at first marriage is characteristic for Muslims with several exceptions. The average proportion married for the 18 countries is 73 percent for Muslims and 65 percent for non-Muslims. The average age at first marriage (for ever-married women) is about one year earlier for Muslim women (17.3) than for non-Muslims (18.2). In Nigeria, the difference is four years. Polygyny is also more common for Muslims with an average of 35 percent of women in polygynous marriages compared with 24 percent for non-Muslims. According to Islamic law, a man may have more than one wife though in many countries (e.g., Turkey and Tunisia) it is forbidden by law. Moreover, the practice has declined in recent years.

Two background factors usually associated with both nuptiality and fertility are education and urban-rural residence. Their connections are explored in Table 4. In 15 of the 18 countries, the percentages of Muslim women with no schooling are higher than for non-Muslims. The three exceptions are in Mali, Tanzania and Uganda. The latter two countries have low proportions with no schooling and show lower fertility for Muslims. In Kenya, there is a large difference with 44 percent of Muslims compared with only 6 percent of non-Muslim women in this category. Muslims in Kenya are concentrated in the two least developed regions – the Northeast and the Coastal regions. In the Northeast, 97 percent of the population are Muslim and 39 percent in the Coastal region compared with only 7 percent nationally. The mean years of schooling, with the same three country exceptions, are all lower for Muslim women. Nigeria shows a particularly large difference between the two categories with an average of 9.2 years for non-Muslims and 3.2 years for Muslim women.

The differences between the two religious groups in the proportions living in cities are mixed with about half of the countries showing Muslims in more rural areas and half in more urban settings.

A multiple regression analysis with these and several other covariates of age at marriage (for ever-married women) is shown for each country in Table 5. The standardized regression coefficients showing the association of the Muslim – non-Muslim distinction with age at marriage are generally negative and significant, indicating lower ages at marriage for Muslims in the presence of four other covariates – residence, education, polygyny, and age. In Ethiopia and Mozambique the coefficients for religion are

positive. The urban-rural variable shows city residence correlated with a later age at marriage more consistently than religion but with roughly the same influence. Years of schooling are strongly associated with later age at marriage without exception. Women in polygynous marriages are significantly more likely to have married at younger ages. Age at marriage in these countries will clearly increase in the coming years as education and urban residence increase and polygyny declines.

Number of Children Desired

Among married women, two important determinants of fertility are the desired number of children and contraceptive practice. The number desired is measured here by the number considered ideal[4] and the intention to cease childbearing. These two measures of reproductive preferences are presented for Muslims and non-Muslims in Table 6. The mean number of children desired[i] by Muslim women is higher in every country except in Mali in 2012-13 and Tanzania in 2004 (although the positive association is evident in the multivariate analysis described below). A very similar pattern is evident with the proportion of (married) women who want no more children, which is lower for Muslims except in Guinea and Liberia.

Several multivariate analyses are presented in connection with reproductive preferences in order to determine whether the association with Muslims and non-Muslims can be explained by interrelations with other covariates. In addition to education, urban-rural residence, polygyny and an age control, we include the number of living children, the number of child deaths, wealth, exposure to radio and television, and two indices intended to assess attitudes toward the status of women (who makes various decisions in the home and attitude toward husbands' beating of wives, both coded with a positive direction indicating the more egalitarian position).

The multiple regression results in Table 7 indicate that even with all of the controls, Muslims are still associated with a desire for larger families in all 18 countries with this positive relationship maintained at statistically significant levels for 15 countries. Countries with the highest predictive values for the number of children desired from the Muslim – non-Muslim distinction are Ethiopia, Ghana, Kenya and Nigeria. Other variables that relate directly with the number of children desired in this multivariate analysis include the actual number of children which would be expected, later ages at marriage, and the number of child deaths. The latter association strengthens the implication that a reduction in child mortality will ultimately lead to a decline in fertility. Education and wealth are also universally connected with a desire for fewer children (with the exception of Chad). Urban residence is for the most part related to wanting fewer children although there is less consistency. With few exceptions, polygyny is associated with a desire for more children. Exposure to radio and television shows some evidence of relating to a desire for fewer children although there are numerous exceptions. And finally, the measures of gender equality also tend to indicate a

[4] Non-numeric responses such as: "It's up to God" have been assigned a value one standard deviation above the average number desired by those responding with a number.

preference for smaller families. This latter association with the two gender equality measures which is over and above the association with the Muslim – non-Muslim difference is not in accord with another study of four Asian countries that concluded that the general pronatalist attitudes of Muslim women "cannot be accounted for by any general tendency of Muslim women to have less autonomy than non-Muslim women" (Morgan, et al., 2002). A simple comparison of the averages of these two measures for Muslim and non-Muslim women in 16 countries indicates consistently more egalitarian attitudes on the "decision" measure for non-Muslim women but less difference on the "beating" indicator (not shown).

These results are for currently married women most of whom already have children which, of course, can be expected to influence the number desired. A clearer picture can be seen by confining the analysis to young women under 20 years of age. The mean number of children desired by young Muslim women is greater in 14 of the 18 countries averaging 5.1 compared with 4.4 by non-Muslim teenagers. A multiple regression analysis with a reduced number of covariates relevant for younger women is shown in Table 8 and again shows a direct statistically significant effect of being Muslim in most of the countries. Education is strongly inversely related to the number of children desired and viewing television also shows a negative impact. Rural residence generally shows a positive effect.

The other measure of reproductive preferences included in this analysis is the proportion of married women who say they want no more children. In all but two of the countries (Guinea and Liberia), non-Muslim women are more inclined to want to cease childbearing (Table 6).

An additional multiple logistic regression looks at whether women want more or no more children with a control for the number of existing children (Table 9). Also included are the covariates seen before. Significant odds ratios for the Muslim – non-Muslim variable are evident in 15 of the 18 countries showing higher proportions of Muslims wanting more children. The countries with the strongest association are the same as listed above in connection with the desired number of children (plus Cameroon). Other covariates of intention to terminate childbearing besides the obvious connections with age and number of children, are years of schooling, child deaths, and one of the measures of gender equality. These variables indicate that the intention to have no more children increases with education and with a greater participation of women in various decisions in the household.

Contraceptive Practice

In the Muslim world, there is no universal formal opposition to family planning. Two reviews of this subject both concluded that Islam is permissive of family planning (Boonstra, 2001) and that Islam is not a barrier to programs aimed at reducing unplanned pregnancies (Roudi-Fahimi, 2004). This does not imply that local religious leaders are in accord with this view.

In most of the 18 countries, the percentage of married Muslim women currently using a method of contraception is lower than for non-Muslims. Exceptions include Benin, Mali, Tanzania, and Uganda (Table 10). Unmet need for family planning tends to be similar in many countries and does not show a dominant difference by religion. This is probably because Muslims are more likely to desire a birth soon and be classified in the "no demand for contraception" category. The total demand for family planning, the sum of prevalence and unmet need, shows lower proportions of Muslim women in every country except for Mali and Tanzania.

A multivariate analysis of the factors affecting ever use of contraception is shown in Table 11. The "ever use" measure is preferred to current use because of the typically low prevalence in sub-Saharan countries. The odds ratios indicate that being Muslim is associated with lower levels of ever use of contraception controlling for all of the other covariates in all of the countries with the exceptions of Benin, Tanzania and Uganda where there is no difference. Strong associations appear in Cameroon, Chad, Ethiopia, Guinea, Kenya, Malawi and Nigeria. The number of children desired is consistently associated with less contraceptive use. Years of schooling and wealth show consistent positive odds ratios with the use of contraception. Exposure to mass media shows a positive relationship as does one of the gender measures (who makes household decisions). Polygyny is negatively related, but child mortality shows little association.

We also examined the relationship of religion with the length of birth intervals which is related to contraceptive use. Muslim women had shorter birth intervals than non-Muslim women in many of the countries (especially in Cameroon, Ethiopia and Kenya) but in only a few did this connection remain in the multivariate context (not shown).

Child Mortality

Child mortality rates are declining rapidly in sub-Saharan Africa but, as we have seen, it still remains a factor in relation to reproductive behavior. Since the present study focuses mainly on covariations with religion we have examined the possibility of child mortality differences between Muslims and non-Muslims. The short answer is that in only 7 of the 19 countries are there significant differences, all with higher rates for Muslims. The greatest difference is for Nigeria where among women with at least one live birth, 47 percent of Muslim women report having had at least one child death compared with 34 percent of non-Muslims. Other countries with significantly higher mortality of children among Muslims are Cameroon, Ethiopia, Ghana, Guinea, Liberia and Sierra Leone. In most countries, but not including Nigeria, Cameroon and Ghana, the imposition of controls for the number of births, education and the use of contraception erases the religious difference in child mortality.

Summary and Conclusions

This study has focused on an analysis of the association between religion and fertility in sub-Saharan Africa. It is based on data from the Demographic and Health Surveys which

include only a single question on religion (identification with a particular religion). Since there is little difference in fertility between Catholics and Protestants but typically higher fertility for Muslims, the analysis concentrates on Muslim – non-Muslim differences in 18 countries in the region.

There are strong differences in nuptiality. Higher proportions of Muslims are currently married with consistently earlier ages at marriage. Polygyny is more common among Muslims. Reproductive preferences, measured by the standard question on ideal number of children and by the proportion of married women who want no more children, are both strongly related to the Muslim – non-Muslim dichotomy. This association with higher fertility indicators is subjected to multivariate analyses which include existing number of children, rural-urban residence, education, wealth, child mortality, polygyny, mass media exposure and two measures of gender equality, but the connections with religion are not eliminated.

An analysis of the association of contraceptive use with the Muslim – non-Muslim difference yields similar results in a multivariate context. Unmet need for family planning shows a mixed picture across countries but the total demand for family planning estimated by the sum of modern contraceptive prevalence and unmet need clearly indicates a greater demand by non-Muslim women.

The persistent association of the Muslim – non-Muslim effect on these reproductive measures with numerous covariates controlled may lie in some aspects of the religion itself or in its local practices. More likely, it may result from other unobserved covariates or from inadequate measurement of those included, such as the status of women. If one considers the declines in Muslim fertility in other countries such as Bangladesh or Indonesia, the conclusions of Gavin Jones (2006) seem appropriate that there is nothing intrinsic to Islam in connection with fertility which would suggest in our study the eventual disappearance of the Muslim effect on fertility in Africa.

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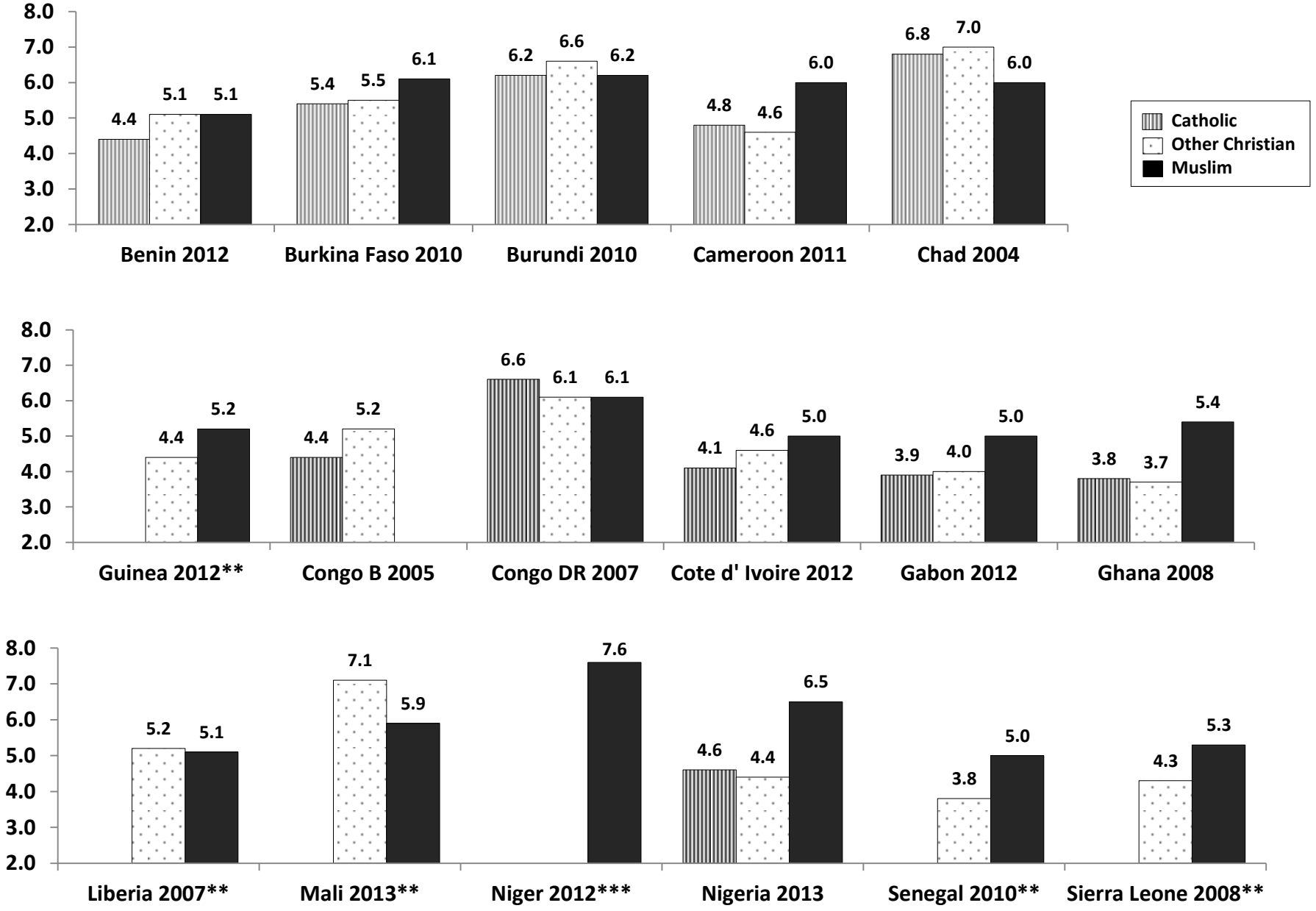
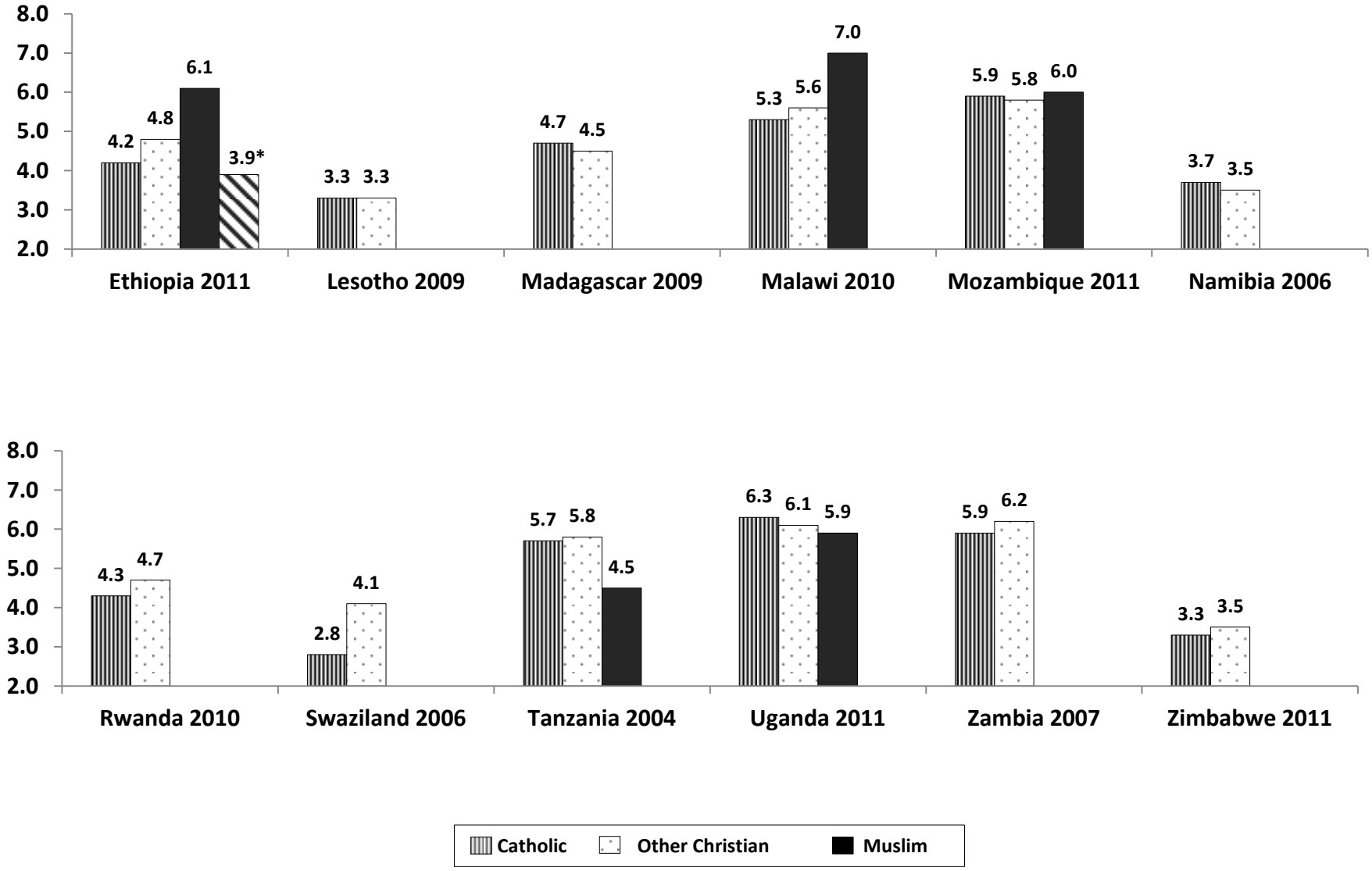
Figure 1a. Total fertility* rates by religion for West and Central Africa.



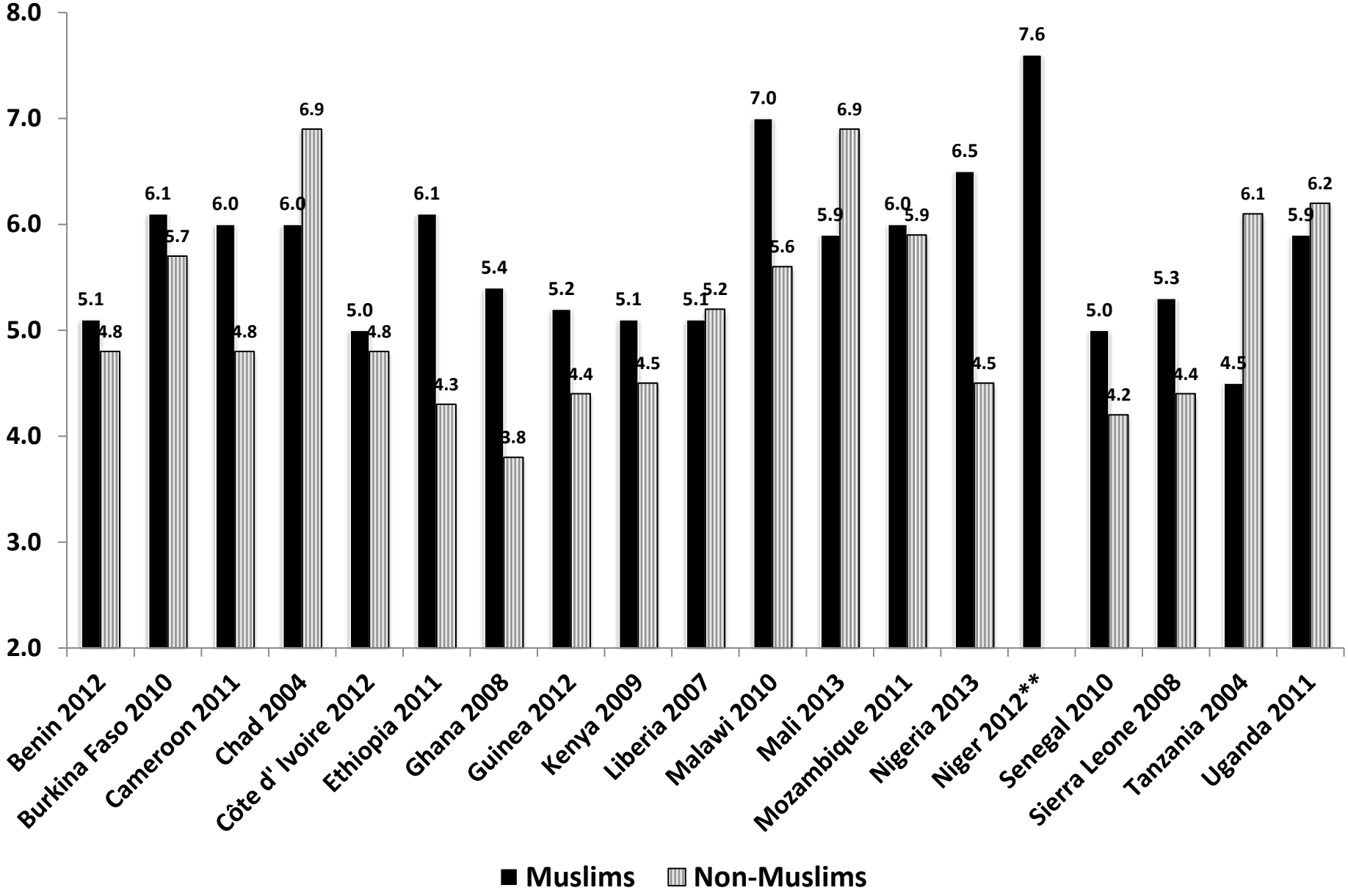
* Based on three years prior to the survey ** Does not distinguish between Catholics and Other Christians *** Did not ask religion in 2012 but in 2006 Muslims were 98 percent of the population

Figure 1b. Total fertility rates by religion for East and Southern Africa.



*In Ethiopia, this is the TFR for Orthodox women

Figure 2. Recent total fertility rates* for Muslims and non-Muslims in sub-Saharan Africa.



* Based on three years prior to survey

** Did not ask religion in 2012, but in 2006 Muslims were 98% of the population

Figure 3. Recent trends in fertility (TFR)* for Muslims and non-Muslims.

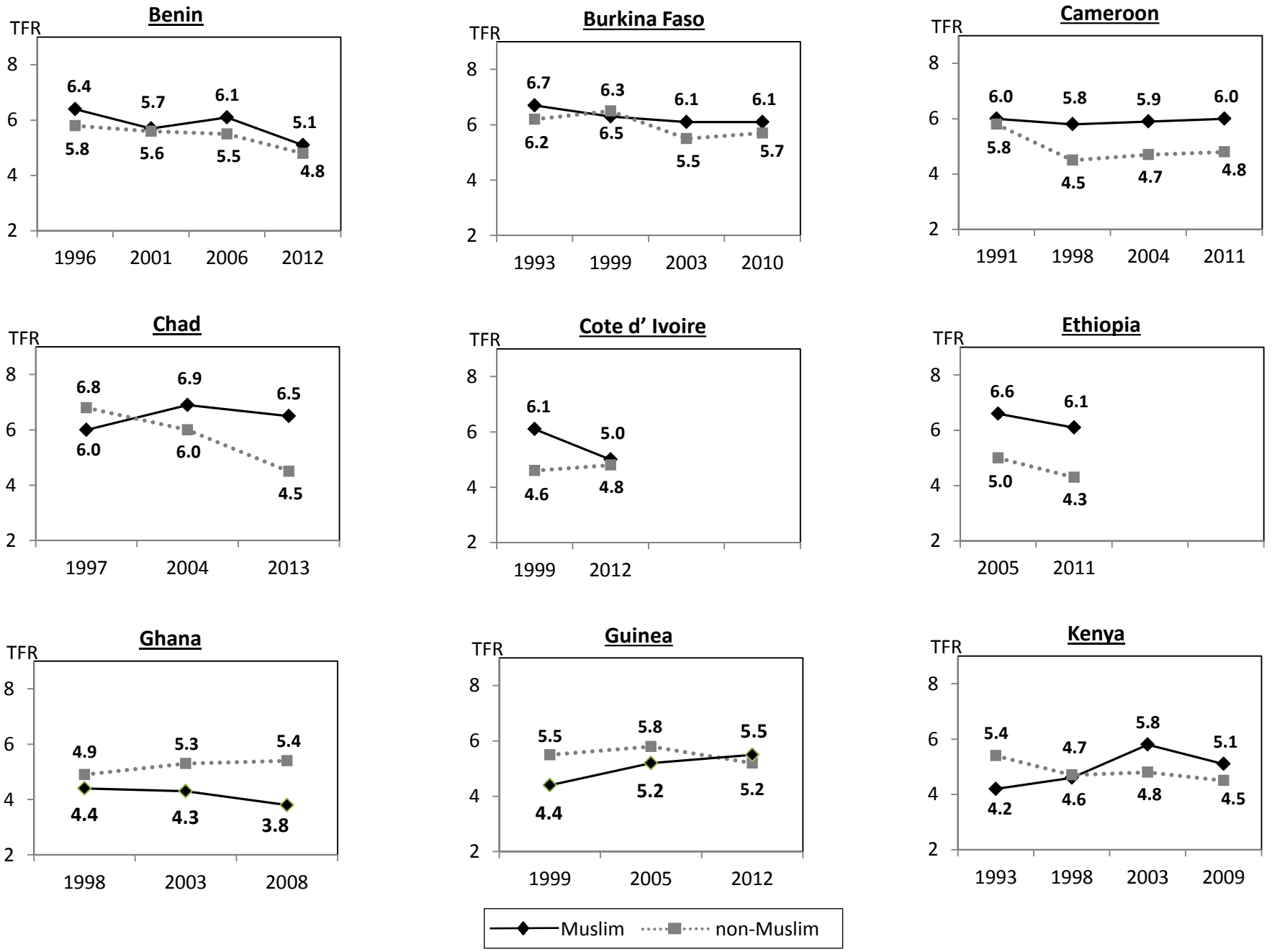
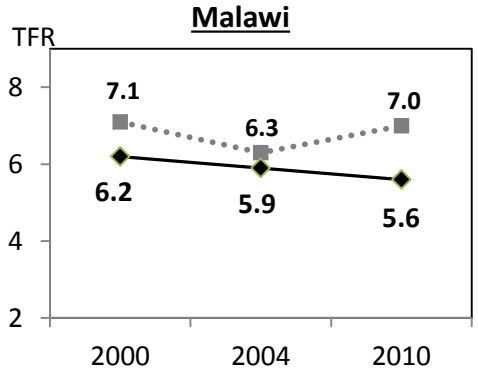
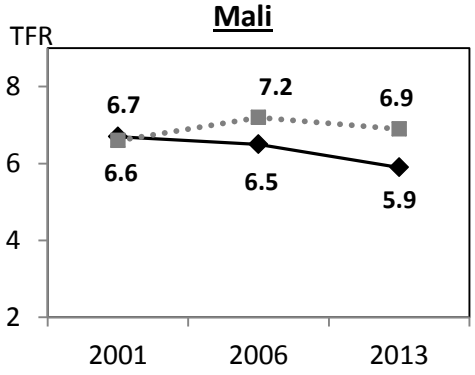
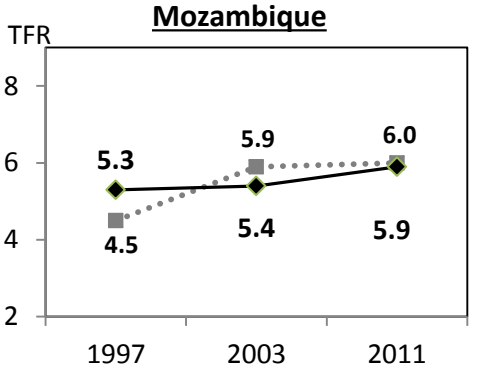
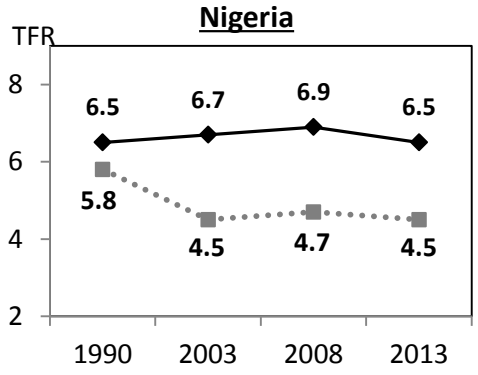


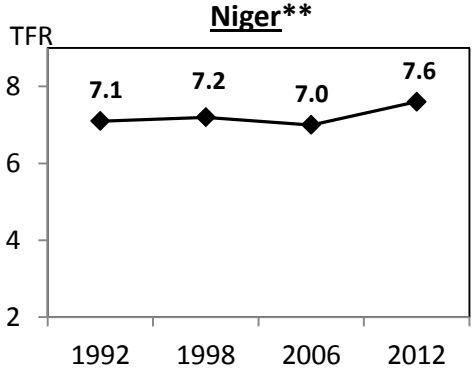
Figure 3, continued.

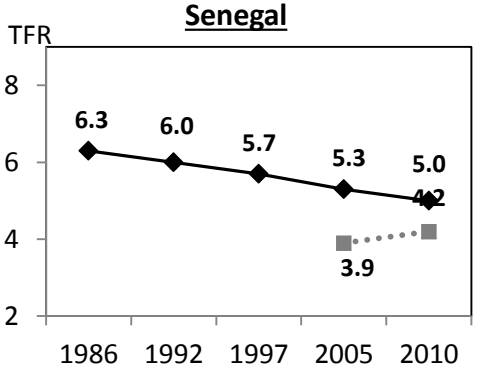


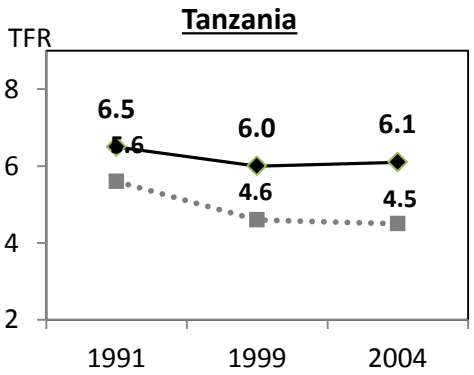


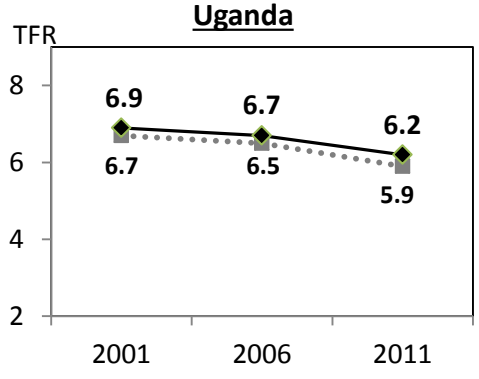












*Based on three years prior to the survey

**Did not ask religion in 2012, but in 2006 Muslims were 98 percent of the population

Table 1. Percentage of women 15 - 49 in sub-Saharan Africa by religion.

		Catholic	Other Christian	Muslim	Traditional	Other	None
				West and Central Africa			
Benin	2012	33	25	22	13	2	5
Burkina Faso	2010	23	7	62	7	—	1
Cameroon	2011	37	36	20	3	1	2
Chad	2004	22	17	57	1	—	2
Congo B	2011-12	31	27	1	10	25	6
Congo DR	2007	28	70	1	1	—	1
Cote d' Ivoire	2012	19	26	40	2	1	11
Gabon	2012	42	46	6	1	—	5
Ghana	2008	12	65	15	4	—	3
Guinea**	2012	—	9	87	—	—	4
Liberia**	2007	—	85	10	1	—	3
Mali**	2012-13	—	4	92	1	1	2
Niger**	2006	—	1	99	—	—	1
Nigeria	2013	11	36	52	1	—	—
Senegal**	2010-11	—	4	95	1	—	—
Sierra Leone**	2008	—	21	77	1	—	1
				East and Southern Africa			
Burundi	2010	62	34	2	—	1	1
Ethiopia	2011	1	22	28	1	47*	—
Kenya	2008-09	22	68	7	—	1	2
Lesotho	2009	43	55	—	—	1	1
Madagascar	2008-09	36	36	1	2	6	20
Malawi	2010	21	65	13	—	—	1
Mozambique	2011	29	42	18	—	2	9
Namibia	2006-07	21	77	—	—	—	1
Rwanda	2010	43	54	1	—	1	1
Swaziland	2006-07	5	73	—	18	—	4
Tanzania	2004	28	29	30	—	—	12
Uganda	2011	41	45	13	—	1	—
Zambia	2007	20	78	1	—	1	—
Zimbabwe	2010-11	8	84	1	1	—	6

* In Ethiopia this is the rate for Orthodox women

** Does not distinguish between Catholic and other Christians

Table 2. Mean number of births in past five years to currently married women by religion.

		Catholic	Other Christian	Muslim	Trad/Animist	None	Total
Benin	2012	1.03	1.04	1.08	1.14	1.07	1.15
Burkina Faso	2010	1.06	1.16	1.10	1.14	1.29	1.17
Burundi	2010	1.33	1.38	1.38	—	1.19	1.34
Cameroon	2011	1.00	1.00	1.20	1.20	1.09	1.06
Chad	2004	1.28	1.30	1.17	1.38	1.36	1.22
Congo B	2005	0.88	0.97	1.31	—	0.99	0.96
Congo DR	2007	1.20	—	1.09	—	1.42	1.22
Cote d' Ivoire	2012	0.99	0.89	1.02	1.12	1.19	1.01
Ethiopia	2011	0.89	1.08	1.24	0.90*	—	1.07
Gabon	2012	0.79	—	1.00	0.75	1.05	0.83
Ghana	2008	0.85	0.55	1.09	1.13	1.06	0.90
Guinea**	2012	—	0.89	0.99	—	0.90	0.98
Lesotho	2009	0.74	0.72	—	—	0.84	0.73
Liberia**	2007	—	0.79	0.81	0.77	0.83	0.79
Madagascar	2009	0.88	0.87	0.67	0.94	1.03	0.91
Malawi	2010	1.08	1.10	1.16	—	1.23	1.10
Mali**	2012-13	—	1.18	1.14	1.28	1.26	1.15
Mozambique	2011	1.07	1.08	1.00	1.06	0.75	1.06
Namibia	2006	0.79	0.75	—	—	0.87	0.76
Niger**	2006	—	0.89	1.22	—	1.40	1.22
Nigeria	2013	1.05	1.00	1.15	1.01	—	1.10
Rwanda	2010	1.09	1.17	1.07		1.36	1.13
Senegal**	2010	—	0.90	1.05	1.23	—	1.05
Sierra Leone**	2008	—	0.85	0.95	—	1.20	0.94
Swaziland	2006	0.54	0.67	—	0.49	0.80	0.80
Tanzania	2004	1.11	1.14	0.91	—	1.32	1.09
Uganda	2011	1.30	—	1.25	—	—	1.29
Zambia	2007	1.19	1.25	—	—	—	1.24
Zimbabwe	2011	0.67	0.86	—	0.95	—	0.84

* In Ethiopia this is the rate for Orthodox women

** Does not distinguish between Catholic and other Christians

Table 3. Marriage indicators for Muslim and non-Muslim women in sub-Sahara African countries.

		Percent Currently Married		Percent Polygynous*		Mean Age at First Marriage**	
		Muslim	non-Muslim	Muslim	non-Muslim	Muslim	non-Muslim
Benin	2012	75	69	44	35	18.5	19.2
Burkina Faso	2010	82	75	46	36	17.2	17.9
Cameroon	2011	77	60	42	22	15.9	18.6
Chad	2004	77	76	40	37	15.4	16.4
Cote d' Ivoire	2012	69	59	35	23	18.3	19.3
Ethiopia	2011	69	59	16	7	16.4	16.2
Ghana	2008	64	57	33	16	18.9	19.2
Guinea	2012	74	71	50	33	16.7	16.6
Kenya	2009	65	58	22	13	17.9	19.2
Liberia	2007	74	63	32	15	17.7	18.1
Malawi	2010	71	67	21	13	16.8	17.5
Mali	2012-13	85	82	36	28	17.5	17.8
Mozambique	2011	72	67	20	21	18.5	18.3
Nigeria	2013	83	59	44	17	16.1	20.1
Senegal	2010	67	49	35	19	18.3	20.1
Seria Leone	2008	78	63	43	25	16.8	18.2
Tanzania	2004	65	68	25	24	18.1	18.1
Uganda	2011	63	62	42	26	17.1	17.7
All Countries		73	65	35	23	17.3	18.2

* Based on currently married women

** Based on ever-married women

Table 4. Education and urban residence comparisons of Muslim and non-Muslim women 15 - 49 in sub-Saharan Africa.

		Percent No Schooling		Mean Years of Schooling		Percent Urban	
		Muslim	non-Muslim	Muslim	non-Muslim	Muslim	non-Muslim
Benin	2012	70	57	2.2	3.3	47	46
Burkina Faso	2010	79	66	1.4	2.4	26	29
Cameroon	2011	49	13	2.8	7.1	42	57
Chad	2004	90	54	0.5	2.1	23	19
Cote d' Ivoire	2012	71	42	2.2	4.2	62	44
Ethiopia	2011	61	48	2.0	3.3	15	28
Ghana	2008	68	60	2.5	7.0	58	47
Guinea	2012	68	60	2.5	2.8	39	20
Kenya	2009	44	6	4.4	8.1	46	24
Liberia	2007	64	41	2.2	3.8	45	42
Malawi	2010	28	14	4.1	5.5	17	19
Mali	2012-13	76	78	1.9	1.6	26	12
Mozambique	2011	42	30	2.7	4.0	32	35
Nigeria	2013	65	9	3.2	9.2	33	52
Senegal	2010	59	36	2.8	5.3	49	62
Sierra Leone	2008	72	46	1.9	4.6	32	50
Tanzania	2004	20	26	5.5	5.0	44	22
Uganda	2011	11	14	6.2	5.7	32	18
All Countries		58	39	2.9	4.7	37	34

Table 5. Multivariate regression of factors associated with the age at first marriage for ever married women (standardized partial regression coefficients).

	Benin	Burkina Faso	Cameroon	Chad	Cote d' Ivoire	Ethiopia	Ghana	Guinea	Kenya	Liberia	Malawi	Mali	Moz.	Nigeria	Senegal	Sierra Leone	Tanzania	Uganda
	2012	2010	2011	2004	2012	2011	2008	2012	2009	2007	2010	2012-13	2011	2013	2010	2008	2004	2011
Muslim	—.023	—.071	—.075	—.115	—.064	.078	(.032)	(.011)	(.020)	(—.017)	—.014	—.023	.032	—.189	—.039	—.065	—.066	—.070
Rural	—.058	—.070	—.031	(.020)	—.0.89	—.0.68	—.112	—.099	—.095	—.063	—.029	—.034	—.038	—.112	—.109	—.034	—.038	—.051
Years of Schooling	.174	.253	.371	.148	.199	.302	.265	.217	.400	.157	.309	.146	.136	.303	.227	.211	.295	.361
Polygynous	—.026	(—.011)	—.019	—.043	—.051	(—.002)	—.036	—.041	(—.010)	(—.010)	—.032	—.039	(—.001)	—.065	—.079	—.050	—.045	(.004)
Age	.281	.191	.206	.139	.208	.084	.158	.211	.219	.195	.206	.353	.332	.133	.232	.195	.136	.164
Number of Women	11,631	13,369	9,265	4,397	6,317	9,970	2,916	7,144	4,961	4,333	15,326	8,943	8,287	29,128	10,795	5,231	6,722	5,180
R^2	.116	.123	.220	.061	.113	.113	.130	.106	.231	.070	.089	.140	.116	.287	.136	.110	.111	.155

( ) Not significant at the .05 level

Table 6. Measures of reproductive preferences for Muslims and non-Muslims in sub-Saharan Africa.

		Mean Number of Children Desired*		Percent Want No More Children**	
		Muslim	non-Muslim	Muslim	non-Muslim
Benin	2012	5.1	4.4	22	29
Burkina Faso	2010	5.7	5.4	21	28
Cameroon	2011	7.1	5.3	19	29
Chad	2004	9.7	8.6	6	12
Cote d' Ivoire	2012	5.7	5.2	19	21
Ethiopia	2011	5.5	4.4	31	40
Ghana	2008	5.6	4.1	21	40
Guinea	2012	6.1	5.5	21	14
Kenya	2009	5.6	3.7	26	58
Liberia	2007	5.4	5.1	34	31
Malawi	2010	4.4	4.0	41	48
Mali	2012-13	5.9	6.1	21	24
Mozambique	2011	5.3	4.7	21	30
Nigeria	2013	8.1	5.2	11	31
Senegal	2010	5.8	4.9	21	28
Sierra Leone	2008	5.3	4.4	30	32
Tanzania	2004	4.9	5.1	27	30
Uganda	2011	5.0	4.9	38	43
All Countries		6.0	5.0	24	32

* Non-numeric responses such as: "It's up to God" have been assigned a value one standard deviation above the average number desired by those responding with a number

** Based on currently married women

Table 7. Multivariate regression of factors associated with the number of children desired by currently married women (standardized partial regression coefficients).

	Benin	Burkina Faso	Cameroon	Chad	Cote d' Ivoire	Ethiopia	Ghana	Guinea	Kenya	Liberia	Malawi	Mali	Moz.	Nigeria	Senegal	Sierra Leone	Tanzania	Uganda
	2012	2010	2011	2004	2012	2011	2008	2012	2009	2007	2010	2012-13	2011	2013	2010	2008	2004	2011
Muslim	.066	.043	.100	.168	.054	.200	.218	.079	.233	(.000)	.039	(.003)	.068	.215	.025	.067	.143	(.019)
Number of children	.261	.291	.120	.175	.225	.214	.160	.157	.171	.264	.294	.173	.271	.210	.054	.175	.250	.182
Age	–.056	–.093	.113	.042	(–.011)	(.010)	.068	(.008)	.034	.057	.111	(.011)	.086	–.019	.073	.073	(.026)	.029
Rural	.023	.035	(–.015)	.132	.054	–.107	(–.018)	(–.013)	–.041	(.002)	.049	.033	.050	.011	.085	.053	.078	.073
Age at marriage	(–.009)	–.040	–045	(–.009)	–.023	.020	–.026	–.028	(–.014)	–.024	–.027	(–.009)	–.026	–.046	–.052	–.045	(–.011)	(.013)
Years of schooling	–.065	–.107	–.156	–.149	–.138	–.055	–.127	–.112	–.237	–.062	–.110	–.071	–.108	–.112	–.129	–.081	–.129	–.233
Wealth*	–.161	–.154	–.155	.100	–.043	–.137	–.210	–.134	–.100	–.146	–.030	–.057	–.134	–.115	–.031	–.146	–.085	–.076
Listens to radio	–.018	.023	–.025	–.050	–.025	(–.006)	–.031	.051	–.090	(.012)	(–.006)	–.024	.036	–.021	(–.014)	(.003)	–.048	–.056
Watch television	(.016)	–.043	–.026	(–.006)	–.040	–.047	(.034)	–.081	(–.016)	(.016)	–.029	–.046	–.062	–.029	(–.018)	(–.016)	–.039	.106
Polygynous	.046	(.007)	.018	(–.003)	.028	.050	(.015)	.032	.046	.030	(.008)	(.014)	(.012)	.014	–.032	.050	.058	.063
Number of child deaths	.114	.184	.073	.103	.093	.102	.152	.144	(.020)	.100	.092	.094	.131	.135	.014	.095	.066	.108
Decision making**	–.043	–.038	–.046	NA	(.018)	–.067	(.005)	(.003)	–.049	(–.023)	(–.004)	–.028	–.044	–.066	(–.005)	(–.020)	–.120	.035
Beating***	.018	(–.008)	–.033	NA	–.075	–.063	–.090	(–.005)	(–.010)	–.068	–.030	–.059	–.026	–.032	(–.077)	(–.016)	(.014)	–.024
Number of married women	11,200	13,226	8,940	4,380	6,107	9,659	2,809	6,710	4,656	4,114	15,064	8,723	7,837	26,163	10,754	4,874	6,564	4,998
R^2	.170	.296	.253	.154	.177	.213	.328	.170	.366	.172	.253	.102	.304	.359	.089	.173	.233	.224

( ) Not significant at the .05 level

* Wealth index as calculated by the DHS, a composite measure of household's cumulative living standard (http://dhsprogram.com/topics/Wealth-Index.cfm)

** Who makes various decisions in the home, coded with a positive direction indicating more egalitarian position

*** Attitudes towards husbands' beating wives, coded with a positive direction indicating more egalitarian position

Table 8. Multiple regression of factors associated with the number of children desired by women under 20 (standardized partial regression coefficients).

	Benin	Burkina Faso	Cameroon	Chad	Cote d' Ivoire	Ethiopia	Ghana	Guinea	Kenya	Liberia	Malawi	Mali	Moz	Nigeria	Senegal	Sierra Leone	Tanzania	Uganda
	2012	2010	2011	2004	2012	2011	2008	2012	2009	2007	2010	2012-13	2011	2013	2010	2008	2004	2011
Muslim	.082	.049	.147	.139	.064	.248	.168	.115	.328	(–.008)	.044	(–.014)	.080	.271	.042	.096	.153	(.023)
Rural	.113	.110	.016	.083	.133	(–.015)	.130	.050	.061	.064	.097	.097	.124	.068	.136	.093	.173	.145
Years of education	–.196	–.274	–.306	–.131	–.233	–.162	–.197	–.189	–.249	–.116	–.098	–.138	–.149	–.183	–.208	–.194	–.162	–.289
Listens to radio	.046	.013	(.003)	(–.029)	(–.021)	–.050	(–.050)	(.022)	–.042	.089	(.011)	–.050	.049	–.032	(–.019)	(–.042)	(–.036)	–.076
Watch television	–.059	–.072	–.103	–.093	(–.045)	–.073	–.077	–.193	–.094	(.031)	–.040	(–.017)	–.108	–.058	–.045	–.057	–.062	(.019)
Number of women	2,922	3,338	3,587	1,450	1,967	3,802	1,033	1,988	1,767	1,329	5,040	1,918	3,065	7,905	3,604	1,253	2,294	1,394
R^2	.082	.151	.208	.096	.124	.137	.142	.121	.291	.018	.033	.053	.110	.209	.106	.111	.104	.139

( ) Not significant at the .05 level

Table 9. Multiple logistic regression (odds ratios) of factors associated with wanting more children for currently married women.

	Benin	Burkina Faso	Cameroon	Chad	Cote d' Ivoire	Ethiopia	Ghana	Guinea	Kenya	Liberia	Malawi	Mali	Moz.	Nigeria	Senegal	Sierra Leone	Tanzania
	2012	2010	2011	2004	2012	2011	2008	2012	2009	2007	2010	2012-13	2011	2013	2010	2008	2004
Muslim	0.61	0.72	0.48	0.47	(0.88)	0.52	0.36	(1.05)	0.12	(0.97)	0.77	0.89	0.61	0.36	0.72	0.82	0.63
Number of children	1.50	1.57	1.72	1.37	1.58	1.41	2.12	1.65	1.86	1.61	1.76	1.44	1.53	1.47	1.68	1.91	1.49
Age	1.11	1.15	1.07	1.07	1.10	1.04	1.06	1.13	1.08	1.08	1.08	1.12	1.06	1.14	1.10	1.08	1.07
Rural	0.76	0.69	(0.95)	0.64	0.77	(0.87)	(0.93)	(0.90)	1.27	(0.96)	(0.62)	(.092)	0.65	0.88	0.75	0.80	0.66
Years of education	1.04	1.04	(1.02)	1.06	1.05	0.98	1.05	(0.84)	1.07	(1.01)	1.03	(1.01)	1.02	1.02	1.05	1.04	1.05
Wealth*	1.17	1.14	1.29	(1.01)	(1.07)	1.18	1.22	(1.00)	1.22	(1.07)	1.09	1.06	1.29	1.29	(0.99)	(1.06)	1.09
Listens to radio	0.91	0.90	(1.00)	(1.01)	(0.97)	0.92	(1.00)	0.88	1.14	(0.95)	(0.97)	(0.72)	0.75	(1.04)	(1.03)	(0.96)	(1.01)
Watch television	(1.00)	1.21	(0.99)	(1.11)	(1.07)	1.09	(1.04)	1.13	(0.97)	0.88	(1.02)	(1.00)	1.15	(1.05)	(1.07)	(0.95)	(1.01)
Polygynous	(0.93)	(1.07)	(1.05)	(1.16)	(1.06)	(0.90)	(0.88)	(1.15)	(0.97)	(1.01)	(0.98)	(0.97)	(0.94)	(1.04)	1.15	0.78	(0.94)
Number of child deaths	1.08	1.05	1.09	1.11	1.09	1.07	(1.01)	1.15	(0.98)	1.09	1.19	1.09	(1.05)	(1.02)	1.19	1.09	1.10
Decision making**	1.03	1.10	1.04	NA	(0.95)	1.04	(1.05)	0.94	1.09	(0.94)	(1.02)	1.13	1.06	1.18	1.05	0.94	1.07
Beating***	(1.03)	0.95	(1.01)	NA	1.08	1.03	1.07	1.13	(1.04)	(1.04)	(1.06)	(1.02)	(1.02)	(1.01)	0.98	1.04	(1.02)
Married Women	11,200	13,226	8,940	4,382	6,107	9,659	2,809	6,710	4,508	4,070	15,064	8,723	7,837	26,181	10,574	4,874	6,564
R^2	.247	.371	.317	.213	.303	.179	.331	.354	.338	.276	.292	.279	.226	.360	.363	.300	.252

( ) Not significant at the .05 level

* Wealth index as calculated by the DHS, a composite measure of household's cumulative living standard (http://dhsprogram.com/topics/Wealth-Index.cfm)

**Who makes various decisions in the home, coded with a positive direction indicating more egalitarian position

*** Attitudes towards husbands' beating wives, coded with a positive direction indicating more egalitarian position

Uganda
2011
0.81
1.65
1.08
0.58
1.03
(1.04)
1.08
0.88
0.81
(1.03)
(0.96)
(1.01)
4,998
.297

Table 10. Measures of family planning for Muslim and non-Muslim currently married women in sub-Saharan Africa*

		Percent Currently Using Contraception		Percent Unmet Need		Total Demand for Family Planning	
		Muslim	non-Muslim	Muslim	non-Muslim	Muslim	non-Muslim
Benin	2012	14	13	28	34	42	47
Burkina Faso	2010	15	19	25	24	39	43
Cameroon	2011	7	29	24	24	31	52
Chad	2004	1	5	20	22	21	27
Cote d' Ivoire	2012	14	21	28	27	42	48
Ethiopia	2011	20	33	31	24	50	57
Ghana	2008	12	26	34	36	47	62
Guinea	2012	5	12	24	21	29	33
Kenya	2009	20	48	24	26	43	74
Liberia	2007	10	12	31	37	41	47
Malawi	2010	32	48	32	25	64	73
Mali	2012-13	10	9	26	23	37	32
Mozambique	2011	7	13	23	30	29	43
Nigeria	2013	6	29	15	18	21	47
Senegal	2010	13	27	30	23	43	50
Sierra Leone	2008	7	12	28	30	36	42
Tanzania	2004	31	25	23	25	53	50
Uganda	2011	32	30	31	35	63	65
All Countries		14	22	26	27	40	50

*Demand is the sum of the percent of women using a method and the percent with an unmet need for methods

Table 11. Multiple logistic regression (odds ratios) of factors associated with ever use of contraception by currently married women.

	Benin 2012	Burkina 2010	Cameroon 2011	Chad 2004	Cote d' 2012	Ethiopia 2011	Ghana 2008	Guinea 2012	Kenya 2009
Muslim	(1.01)	0.81	0.43	0.50	0.67	0.44	0.54	0.43	0.46
Number of children	1.04	1.24	1.19	1.10	1.20	1.14	1.26	1.22	1.15
Number desired	(0.99)	0.84	0.91	0.90	0.90	0.90	0.91	0.90	0.82
Age	1.02	0.99	0.99	(0.99)	0.98	0.97	0.96	(0.99)	1.02
Age at marriage	(0.99)	0.98	(1.00)	(1.03)	1.01	0.97	(0.99)	(1.02)	0.98
Urban-rural	(1.01)	0.66	1.24	0.73	(0.97)	0.77	(0.98)	(0.87)	1.24
Years of schooling	1.06	1.11	1.23	1.21	1.08	1.04	1.10	1.05	1.15
Wealth*	1.11	1.31	1.41	1.36	1.22	1.44	1.21	1.22	1.26
Listen to radio	1.09	1.11	1.08	1.16	1.16	1.09	1.16	1.23	1.20
Watch TV	1.17	1.33	1.17	1.15	1.12	1.39	(1.07)	(1.05)	1.12
Polygynous	(0.94)	0.73	(0.95)	(1.09)	0.78	0.44	(0.97)	0.80	0.78
Number of child deaths	1.05	(1.00)	(1.04)	(1.02)	(0.94)	0.92	(1.10)	(1.04)	(0.95)
Decision making**	(0.98)	1.05	1.07	NA	1.15	1.09	1.07	1.07	1.10
Beating***	(0.98)	(1.00)	(0.97)	NA	(0.98)	1.07	(0.99)	1.18	(0.98)
Number of women	11,200	13,226	8,940	4,182	6,107	9,659	2,809	6,710	4,656
R^2	.033	.159	.281	.255	.104	.228	.112	.096	.264

( ) Not significant at the .05 level

* Wealth index as calculated by the DHS, a composite measure of household's cumulative living standard (http://dhsprogram.com/topics/Wealth-Index.cfm)

**Who makes various decisions in the home, coded with a positive direction indicating more egalitarian position

*** Attitudes towards husbands' beating wives, coded with a positive direction indicating more egalitarian position

Table 11 (cont)

	Liberia 2007	Malawi 2010	Mali 2012-13	Mozambique 2011	Nigeria 2013	Senegal 2010	Sierra Leone 2008	Tanzania 2004	Uganda 2011
Muslim	(0.86)	0.49	0.73	0.69	0.49	0.69	0.84	(1.01)	(1.00)
Number of children	1.20	1.64	1.24	1.34	1.31	1.31	1.30	1.24	1.25
Number desired	0.94	0.88	0.91	0.93	0.84	0.88	0.92	0.85	0.87
Age	0.97	0.96	0.97	0.96	0.98	(0.99)	(1.00)	0.98	(0.99)
Age at marriage	1.02	(1.00)	1.02	(1.01)	(1.01)	(1.00)	(1.02)	(1.01)	0.97
Urban-rural	0.64	0.78	0.67	0.83	0.79	0.60	0.72	0.66	0.80
Years of schooling	1.12	1.12	1.08	1.13	1.08	1.13	1.12	1.11	1.14
Wealth*	1.31	1.06	1.33	1.40	1.35	1.24	1.42	1.13	1.43
Listen to radio	1.20	1.13	1.07	1.10	1.09	(1.05)	1.21	1.15	1.12
Watch TV	(1.04)	1.06	1.15	1.20	1.12	1.23	1.26	1.16	0.91
Polygynous	(0.84)	(0.92)	(0.95)	(0.95)	0.91	(0.90)	0.70	0.86	(0.94)
Number of child deaths	1.20	1.10	1.12	(1.06)	0.92	(1.04)	(1.09)	(1.05)	0.93
Decision making**	(0.96)	1.04	1.15	1.14	1.19	1.04	(1.03)	1.19	(0.96)
Beating***	(0.98)	0.95	1.03	(1.05)	(0.97)	(1.01)	(0.97)	0.95	(1.01)
Number of women	4,114	15,064	8,723	7,837	26,163	10,574	4,874	6,564	4,998
R^2	.154	.110	.124	.159	.269	.141	.153	.139	.166

( ) Not significant at the .05 level

* Wealth index as calculated by the DHS, a composite measure of household's cumulative living standard (http://dhsprogram.com/topics/Wealth-Index.cfm)

**Who makes various decisions in the home, coded with a positive direction indicating more egalitarian position

*** Attitudes towards husbands' beating wives, coded with a positive direction indicating more egalitarian position