

A SOCIAL AND DEMOGRAPHIC PROFILE

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Abstract

The variable **religion** was provided in the individual dataset of Tanzania's DHS 2004-05 which refers to a sample of women in reproductive age. I merged the individual and the household persons' datasets in order to determine the religious affiliation of all individuals. The merged file served to calculate estimates of Muslims and non-Muslims in the entire household population. This article reports the results assuming the following: (1) mortality trend complies with the UN medium assumption in *World Population Prospects*; (2) fertility assumption was based on analyses of the most recent DHS data; (3) null migration. Initial population distribution was derived from the figures of the last population census. Tanzania's population is composed of 26 percent Sunni Muslims, while the remaining 74 percent belong to several non-Muslim denominations.

Key-words: Tanzania, DHS, Muslim, Demographic Estimates, Merging

ملخص:

يحتوي ملف الأفراد في المسح الديموغرافي والصحي لطنزانية 2004-2005 على متغير يخص الدين ويتعلق بعينة النساء في سن الإنجاب فحسب. لقد قمت بمزج ملف الأفراد مع ملف الأسر المعاشية مما مكّني من تحديد الانتماء الديني لكل الأفراد. الملف الجديد الممزوج تم استعماله لحساب تقديرات عدد وخصائص مجموع السكان. يقدم هذا المقال نتائج هذه التقديرات المبنية على الفرضيات التالية: (1) اتجاه

الوفيات يتبع الفرضية الوسطى للأمم المتحدة، (2) فرضية الخصوبة مبنية على تحليل أحدث بيانات المسح الديمغرافي والصحي، (3) الهجرة الخارجية معدومة. توزيع السكان الأصلي مستخرج من آخر تعداد للسكان. يتكون سكان طنزانية من 26 بالمئة مسلمين سنّة، أما 74 بالمئة الباقية فينتمون الى ديانات أخرى.

كلمات مفتاحية: طنزانية، مسلم، المسح الديموغرافي والصحي، تقديرات ديموغرافية، مزج الملفات.

Introduction

The aim of this article is to provide a demographic profile of Muslims in Tanzania. First, I present some background information about the total current (2009) population of Tanzania and present the data and the methods used to estimate the figures on which this paper is based. I discuss Muslims' demographic trends and trajectories from 2009 to 2019 and 2029, the dynamic of natural increase, and related social and economic issues. The article ends with a general conclusion. It includes separate appendices for the methods and data used to generate the information about Muslims in Tanzania. Figure 1 provides a reference map of Tanzania, a country of East Africa where the religious mix of the population and its continuous change during the last half a century make it an interesting case study.

As early as the mid-sixties and before independence, analysts noted the growing significance of Islam as a political factor in East Africa and predicted the trend to continue. Montgomery Watt (1966, p.44) concluded his discussion of the 'political relevance of Islam in East Africa' in these terms:

"There are grounds for thinking that in 20 or 30 years time Islam may well be a dominant factor in East African politics. It would be rash to predict the future, but Islam is already potentially a political force of the first magnitude, and it is urgent that it should receive more attention from students of politics."

On the other hand, and about twenty years later, Mazrui (1988) was less assertive about the growing significance of Islam in Africa. He observed that religious speculation continued since independence with focus on two central issues – Islamic expansion and Islamic revivalism. Mazrui concluded his discussion of these two issues with open questions this study addresses in part, through the case of Tanzania. Mazrui (1988, p. 518) stated:

"But when all is said and done, the dual destiny of Islam in post-colonial Africa remains ambivalent. In the continent as a whole, is Islam on its way towards greater geographical expansion? Or is it destined for a fresh historical revival? Are there new worlds for Islam to conquer on the ground? Or is the faith in quest of old glories to resurrect? Is Islam reaching out for new converts? Or is it searching within for old ancestors? Allah is all-knowing – the Omniscient, the Merciful. "

Demographic Background

Tanzania's total population is estimated at 41,048,532 in 2009 (US Census Bureau International Database). About 26 percent (10,710,510) of this total population are Muslims according to this study's estimate. On average, 34 births and 13 deaths per 1000 population will occur in 2009, thus a growth rate of about 2.8 percent with little to no impact of international migration. Out of 1000 babies of both sexes born in the year, 69 die during the first year of life; that is

62 for female births and 76 for male births. In 2009, a woman expects to live 54 years on average while a man expects to live 51 years. The average number of live births per women of reproductive age (15 to 49 years) is estimated to be about 4.5 live births.

Estimate of Muslims and of Christians in Tanzania is a hot and controversial issue as both the scholarly and lay literature suggest. Since there are no recent and reliable estimates of the population distribution by religion or ethnic background (Lodhi 1994), this article comes as a welcome contribution to the scholarly studies of Muslim demographics. Tanzania's 1967 census is the last census containing a question about religion. The lack of recent census data about religion leaves us with no alternative but to use indirect methods and combined data sources to get the most reliable estimates possible.

In this study, we combine information provided by the most recent national census of population, and data extracted from Tanzania's 2004/2005

Demographic and Health Survey to calculate estimates of Muslims by sex and age for the whole country. We use standard demographic techniques to estimate current population (2009) and to project its growth a decade (2109) and two decades (2029) later.

Historical Background

In this section, I highlight some historical features of Tanzania that are prone to help make sense of the present and projected characteristics of Muslims in Tanzania. It is believed that Islam has arrived quite early to East Africa; the oldest functioning mosque in Zanzibar dated AD 1007. It spread through traders but remained an urban and coastal phenomenon for quite long (Lodhi 1994).

Four distinct historical periods have had different legacies with regard to Islam and Muslims in this country: (1) the pre-colonial time, (2) The German dominated Tanzania, (3) The British era, and (4) independent Tanzania.

It is believed that Islam was common in the Indian Ocean by AD 1300. The great North African traveler Ibn Battuta visited the area in AD 1332 and noted an Arabic and Islamic presence in the East African coastlands. Islam spread in urban and coastal settings through trade and spread later to the interior lands.

Centuries later, driving the Portuguese settlers south to Mozambique, the Omanis ruled East Africa from 1821 to 1890. The end of the Omani era was the beginning of a new era during which Muslim communities were weakened and gradually pushed away from positions of influence and replaced by the newly converted Christians. That Christian expansion continued until WWII. Under the colonial rule, Tanzania became a focal point of struggle for power and influence; local and foreign Muslim preachers and political agitators competed against missionaries and colonial administrations to gain new converts and to consolidate their respective power and gain positions of influence.

Perhaps because of the dynamics of religious conversion which characterize the country but also because of the post-colonial nation building policy which put

Tanzania on the world stage, scholars of Islam and politics speculated on the future of Islam in Tanzania and its expected political impact on the region of East Africa. This study aims to contribute to the scholarly understanding of this population by providing a demographic profile of Muslims in this country using standard methods of scientific study of population and reliable data sources free of any *à priori* bias or political agenda.

The United Republic of Tanzania emerged as a sovereign nation from the association of two separate entities: Tanganyika and Zanzibar in 1964.

Tanganyika gained independence from the British colonial rule in December 1961. One year later it became a republic under the leadership of Julius Nyerere. The off-shore island of Zanzibar became independent in 1964 after the overthrow of the rule of Sultanate. In the same year, Tanganyika and Zanzibar jointed to form the United Republic of Tanzania (NBS and ORC Macro 2005). The population of Zanzibar is about 99 percent Muslim, while the proportion of Muslims on the mainland is one third at best. The historical trends of the spread of Islam seem to have been from the coastal area inward on the mainland.

Figure 1

Reference map of Tanzania



Data and Methods

Tanzania participated in four waves of the Demographic and Health Survey (DHS) since 1992 (1992, 1996, 1999, and 2004). Although I use the data extracted from the last survey to calculate the actual percent of Muslims, the earlier surveys also were useful in providing time series of fertility indices used to extrapolate the fertility trends over the time span of the projections. The data used to estimate the current figures of percent Muslim were extracted from the individual and household *persons* files of Tanzania's DHS 2004/2005, downloaded from the website of DHS Macro International. The United State's Bureau of the Census international data base, accessed online, provided the Tanzania population distribution by age and sex. The United Nations' World Population Prospects 2008 revision provided the hypothetical trends of mortality and fertility. I also used other sources for comparative and assessment purpose to forecast the most likely future trends of mortality and fertility.

Tanzania's 2004/2005 DHS asked a question on respondent's religion. The variable *religion* is thus included in the DHS individual data file which is composed of women in reproductive age (15 to 49 years old). This is a subsample of the sample of households selected for the survey. In order to expand the variable *religion* to the whole sample of all persons in the household, I match-merged the individual data file with the household persons file. Using the weights provided in the household persons file, I then proceeded to calculate the estimates of the percent Muslim in the whole population.

The population estimates are built on the following assumptions: (1) the mortality assumption is based on the United Nations' medium assumption as shown in the World Population Prospects, the 2008 revision; (2) I constructed the fertility assumption from the most recent (2004/2005) DHS fertility data; (3) migration is assumed to be null although the United States Census Bureau International Database reports negative net migration. The estimates can be adjusted at will if need be using these net migration estimates. The initial population distribution used for the estimates is that of the 2002 population census.

I used the cohort component method to calculate the estimates and projections of the population. This is a textbook method widely used for population projections and forecasting. The method can be applied to project the males and females population separately starting with a single year age distribution or a 5-year age distribution. I use the later because of methodological and practical advantages; one methodological advantage is that a 5-year age distribution reduces the irregularities due to errors in age reporting. There are many practical reasons for this choice too, such as the data available are presented in 5-year age groups, and the computing package I used for the calculation also is designed to run on

5-year age groups. Indeed, I used the program FIVFIV by Shorter, Sendek and Bayoumy (1995).

Muslim Demographic Trends and Trajectories

Current (2009) Estimates of Muslim population and 2019, 2029 projections

In 2009, we estimate the total Muslim population living in Tanzania to be 10,710,510. It breaks down to 5,604,115 females, and 5,106,393 males; thus about 52 percent of the total who reported their religion as Muslims are females and 48 percent are males. The potential for growth is high and the population of Muslims is expected to reach 14,550,480 by 2019, and 18,464,050 by 2029, based on the natural growth only; that is to say no massive conversion to/from Islam neither massive migrations will occur. The population momentum beyond 2029, defined as the growth due to sole effect of the age structure of the population before becoming stationary is approximately 40 percent.

Current Age-Sex Distribution, and the 2019, 2029 projections

The 2009 distribution by 5-year age groups and by sex of Muslims in Tanzania is typical of a young population and it is expected to remain so in the next decade as illustrated in figure 1 which summarizes the information provided in table 1. Note the wide base of the 2009 age pyramid which testifies to the high level of current fertility. Fertility decline will lead to the shrinking of the 4 youngest age groups in 2029. As a consequence, the proportion of people younger than 20 years will shrink in turn.

Table 1

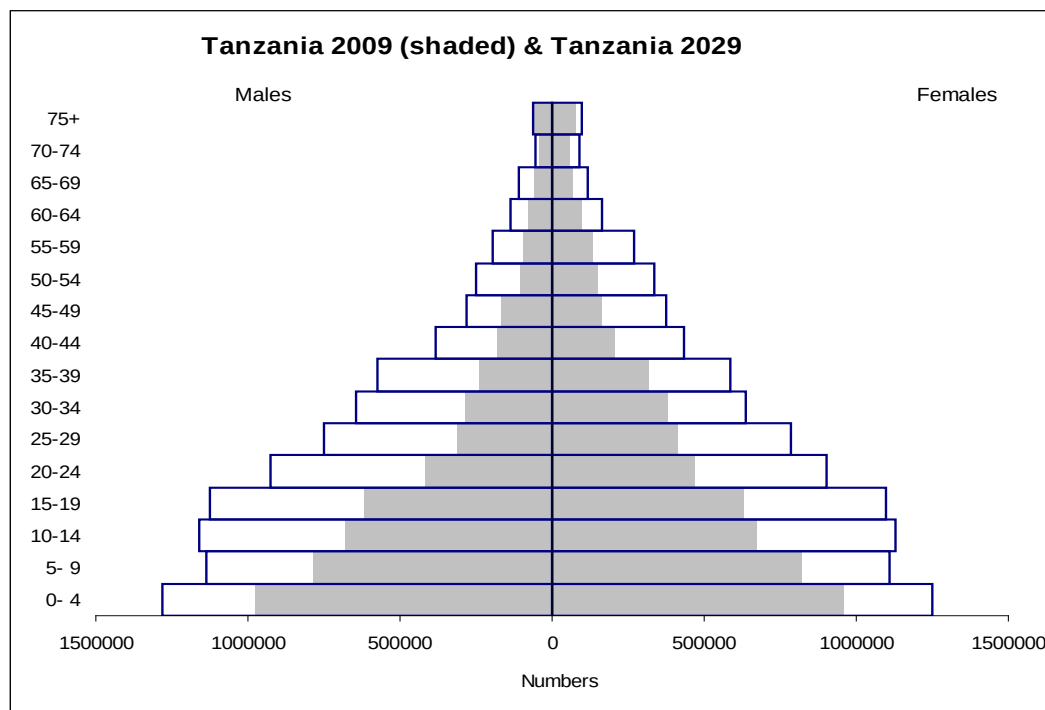
Current Estimates (2009) and Projections (2019, 2029) of the Age-Sex Distribution of Muslims in Tanzania

Age groups	Current Estimates (2009)		2019 Projections		2029 Projections	
	Females	Males	Females	Males	Females	Males
0 – 4	955585	978334	1161616	1191419	1249337	1282684
5 – 9	821122	785753	1113399	1143117	1107743	1138412
10 – 14	673526	680513	920401	944642	1130438	1161426
15 – 19	629177	615257	805211	771373	1096973	1126589
20 – 24	468313	416232	657018	663875	902896	925945
25 – 29	414017	312968	609184	595316	785097	751093
30 – 34	379455	286872	450633	400661	637324	643895
35 – 39	316616	239387	395993	299623	587873	574919
40 – 44	207002	179241	360210	271883	431889	383615
45 – 49	163617	168971	297394	223069	375676	282522

50 – 54	147814	105280	191077	162589	336069	250002
55 – 59	131348	94617	146686	146990	269988	197126
60 – 64	96444	79462	126323	85880	165924	135107
65 – 69	66518	60431	103674	69956	118225	111161
70 – 74	57271	42041	66776	50539	89840	56166
75 & +	76291	61035	70894	53065	96999	61101
Totals	5604115	5106393	7476487	7073995	9382292	9081762
Grand Total	10710510		14550480		18464050	

Figure 2

Estimated Age Distributions of Muslims

**Overall Growth and Growth of Major Age Groups (0-14, 15-64, 65+)**

The overall number of Muslims in Tanzania is expected to grow by about 36 percent in the next decade, and about 72 percent by the end of the second decade. This reality is reflected in the growth of major age groups as well as the very low proportion of the elderly aged 65 years and older. The current proportion of those 65 old and older is about 3.5 percent and will shrink further in the coming twenty years to reach about three percent overall. And, as expected, the proportion of elderly men will reach 2.5 percent, almost one percent lower than the proportion of females in the same age group. The proportions of young people less than 15 years old will decrease very slowly

during the next decade and in a more substantial amount during the second decade. However the end of the period (2029) figures will be still high: there will be about 7.5 percent overall declines over the next twenty years. The proportion of adults aged 15 to 64 years old will continue to grow in about the same proportion as the previous age group.

The demographic momentum which measures the potential of a population to grow under the sole effect of its age structure can be used here to sense Muslim's potential for growth beyond the 2029 projection.

Table 2

Current Estimates and Projections of the overall and major age groups of Muslims, Tanzania 2009 to 2029

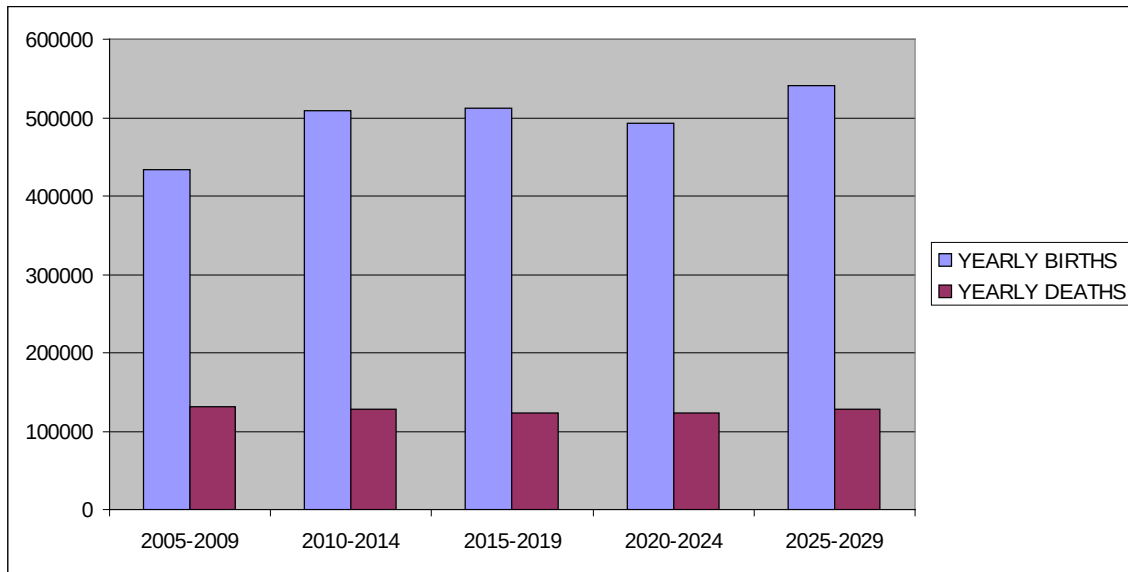
Age groups	2009	2014	2019	2024	2029
Females					
0-14	43.7	44.1	42.7	40.2	37.2
15-64	52.7	52.7	54.0	56.5	59.6
65+	3.6	3.2	3.2	3.3	3.3
Overall	5,604,115	6,532,303	7,476,487	8,375,262	9,382,292
Males					
0-14	47.9	47.7	46.4	43.1	39.5
15-64	48.9	49.6	51.2	54.6	58.0
65+	3.2	2.7	2.5	2.3	2.5
Overall	5,106,393	6,081,262	7,073,995	8,021,419	9,081,762
Both					
0-14	45.7	45.8	44.5	41.7	38.3
15-64	50.9	51.2	52.7	55.6	58.8
65+	3.4	3.0	2.9	2.8	2.9
Overall	10,710,510	12,613,570	14,550,480	16,396,680	18,464,050

Trajectories of births, deaths, and natural growth 2009 to 2029

Despite a declining fertility, the trajectory of births will be growing during the next two decades. This growth is associated with a quasi stable number of deaths for the same period. The expected result is a growing surplus of births of Muslim children (Figure 3). This reality is reflected in the trajectory of the rate of natural increase which will only decline by less than one percent over the next twenty years (Table 3).

Figure 3

Estimated and Projected Yearly Births and Deaths in Muslims of Tanzania

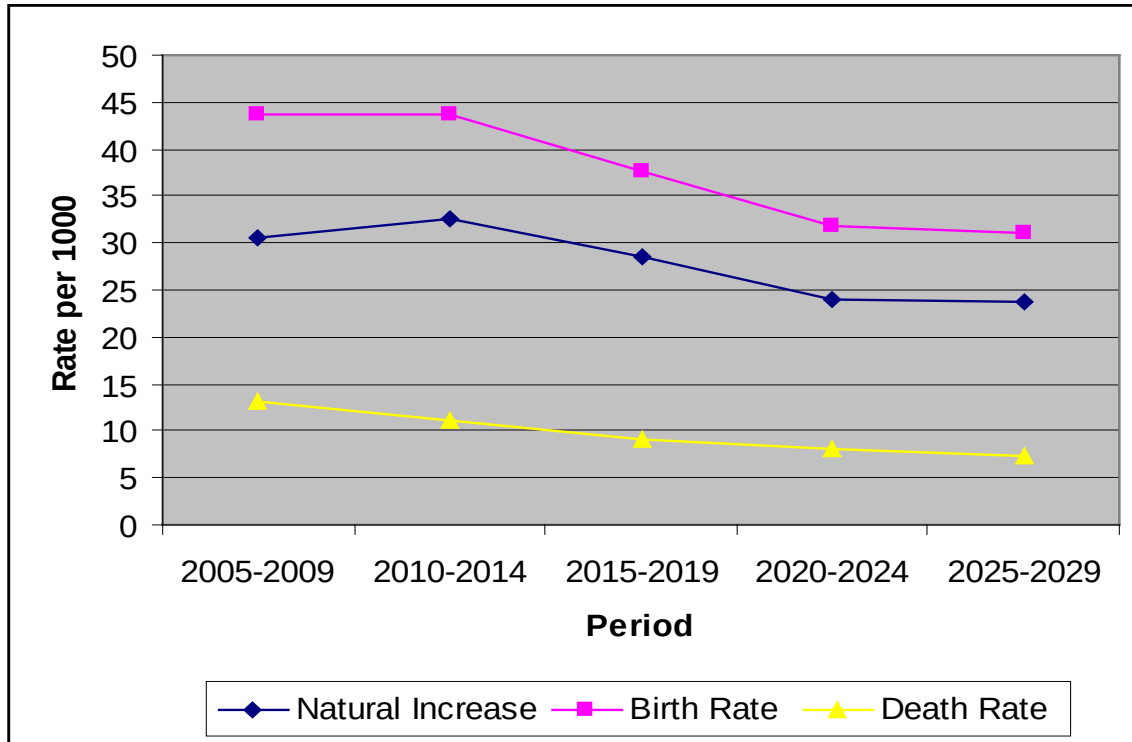
**Table 3**

Mid-year demographic indices for 5-year time periods for Muslims in Tanzania, 2009 to 2029

Period	2005-2009	2010-2014	2015-2019	2020-2024	2025-2029
Total Population	992477	1162315	1354745	1544602	1739969
Yearly Births	433395	508066	511369	492287	540902
Yearly Deaths	130628	127455	123985	123047	127428
Natural Increase (percent)	3.05	3.27	2.86	2.39	2.38
GFR=Births/Fem(15-44)	196	194	168	140	132
Birth Rate (Per 1000)	43.7	43.7	37.7	31.9	31.1
Death Rate (Per 1000)	13.2	11.0	9.2	8.0	7.3

Figure 4

Tanzania's Muslim: Estimated and Projected Average Yearly Rates of Births, Deaths, and Natural Increase



Comment on Internal and International Migration

The United States' Census Bureau provided estimates of the net number of migrants that are very low but negative. Thus, international migration seems to have little to no impact on the overall structure and growth of the population; such impact, if any, will reduce the population not the other way around. The impact of internal migration, especially between the multi-ethnic multi-religious mainland and the overwhelmingly Muslim Island of Zanzibar, might constitute a major issue given the social, economic, and political implications of such transfer of populations.

The Dynamic of Natural Increase

Fertility Levels and Trends

Table 4 displays the fertility and mortality measures of Muslims during the whole period of projections. The values are mid-period estimates. It is a common belief that fertility in Muslims is usually higher than in non-Muslims and its decline is slower. It is also well known that the onset of fertility declines in Muslim populations lagged behind the general trends elsewhere. However, one needs to be careful to generalize when it comes to compare Muslims and non-Muslims in Sub-Saharan Africa. In the case of Tanzania, Islam might indeed play as a factor of high fertility in Muslims compared to Christians, but this might not be true when comparing Muslims to followers of the traditional African religions. The latter also encourage large families.

Religious conversion to Islam, more than conversion to Christianity, of followers of traditional religions might as well play a multiplier effect on high fertility. Indeed, the anthropological literature shows that conversion to Islam is lived more as a continuation of the practice of traditional religions, including polygamy, more stable marriage, and preference for many children. The same is not true with regard to conversion to Christianity.

Mortality, Longevity and Infant Mortality Levels and Trends

Both male and female life expectancies at birth are fairly low in Tanzania. There is an important potential for improvement over the next two decades. Following the United Nations medium assumptions, I estimate life expectancy to reach 64 years for women and 62 years for men. Presently, still an important proportion of newborn do not reach their first birthday. Indeed out of 1000 live births, 93 babies die before their first birthday. Although infant mortality will continue to decline, it still remains comparatively high by the end of the forecasts in 2029. It is also noteworthy that the AIDS epidemic might contribute negatively to the mortality trends. The expectation is that the negative impact of AIDS on mortality and longevity will be comparatively lower in Muslims.

Table 4

Mid-Period Fertility and Mortality Indices for Tanzania's Muslims, 5-year Periods 2009 to 2029

	2005- 2009	2009- 2014	2015- 2019	2020- 2024	2025- 2029
Total Fertility Rate	5.7	5.7	4.9	4.0	3.9
GRR	2.8	2.8	2.4	2.0	1.9
NRR	2.2	2.3	2.1	1.7	1.7
E(0) Females	56.2	59.1	61.1	62.5	64.1
E(0) Males	54.6	57.4	59.3	60.7	62.2

IMR Both	92.6	78.7	69.6	63.2	56.5
E(5) Females	59.5	61.2	62.4	63.2	64.2
E(5) Males	57.9	59.5	60.6	61.4	62.3

Comment on possible impact of Migration

The data at hand do not allow much insight into the possible future impact of migration especially with regard to international migration. It is however noteworthy that internal migration might have an important impact on the both Muslims and non Muslims in the country. There is a 3-tier rationale which supports this assertion: (1) the unbalanced demographic distribution of the population by religious affiliation, (2) a colonial legacy in which religion has constantly been a major motivator for people's political struggles, (3) post colonial nation building under Julius Nyerere characterized by an authoritarian regime suppressing religious and ethnic identities. The new national and international context is likely to increase the significance of these forces. Given this consideration, internal migration becomes a major factor of social change.

Socioeconomic Issues

Most Muslims in Tanzania follow are of the Sunni mainstream majority in the Muslim world, though other sects, the Shi'a Ismaili and the Ibadite, played an important historical role in the political as well as the economic spheres.

Gender and ethnicity

Some believe that the ethnic identity was superseded by the religious identity among Muslims in Tanzania, and perhaps even by their identity as followers of specific Muslim denomination such as Ismaili (Shi'a) mainstream Sunni, or Ibadite. Therefore, it is reasonable to expect that a diminishing role of ethnicity as a defining characteristic and an increasing weight of the religious identity, especially along the line of Shi'a and Sunna, the international context and foreign influence helping in this regard. The 2005 DHS files did not include a variable for ethnicity; so a quantitative analysis of the ethnic composition of Muslims is not possible.

Gender will remain a key issue in the social, economic, and political spheres among Muslims of Tanzania for the coming decades for several reasons: (a) the various Muslim denominations in Tanzania carry a brand of Islam well rooted into the classical Islamic legacy which confines women's participation into a limited sphere that is detrimental to their own development and thus to the development of the Muslim community as a whole; (b) conversion of followers

of traditional religions to Islam does not fundamentally change their perception of woman and the gender relationship. This state of affairs can only significantly altered through massive modern education; unfortunately Muslims are disadvantaged in access to such education whether because of self-exclusion or to adverse conditions that are beyond their.

Educational attainment by gender

My review of the literature shows that because of past political standing of the post independence (socialist) central government in the 1960s and 1970s, and because of extensive missionary activities, the spread of education among Muslims was comparatively slower than say among Christians. The indicators of education calculated from the 2004/05 DHS files support this assertion. Indeed, among those fifteen years old or older, about 27 percent of females and 15 percent of males did not attend elementary school. Although the percent of those who completed elementary education are a lot higher 62 and 71 percent respectively, they are way below massive schooling and the disadvantage of girls is maintained. The gender difference in secondary and post secondary education is less important but still the proportion of male and female who reach these levels of education remain very low. Only eleven percent of males and nine percent of females fifteen years old and older reached secondary education. The figures for college or higher education are respectively three and two percent.

Occupation, unemployment and economic development

I did not calculate data on unemployment and economic development of Muslim. From my review of the literature, Muslims in Tanzania seem to be disadvantaged in access to employment especially in government positions compared to Christians due to historical factors. But in recent time radical changes occurred that probably affected positively Muslims. Analysis of DHS data did not allow us to test this recurrent claim in the literature. Nonetheless, I examined the distribution of the population aged 15 and above in the 'household persons' sample by wealth index and religious affiliation (See Appendix 3). The data tells a different story; Muslims are comparatively richer than other religious group and there are more wealth disparities among Muslims than in other religious groups. The richest category is populated with 39 percent among Muslims, while the part of non-Muslims who are among the richest represents 18 percent only. The proportions of lower categories of wealth (poorest, poorer and middle) are also comparatively lower among Muslims. However the proportion of the richer among Muslims is commensurate with the weight of this religious category in the overall population.

The figures in Appendix 3, table 2 highlight further Muslims' representation by wealth index. While Muslims represent 26 percent of the total population, they represent 25 percent of the richer group but 42 percent of the richest category. On the other hand, Muslims are under represented in the middle, lower and lowest categories of wealth; the percent of Muslims in these three categories of wealth are six percent lower than the overall proportion of Muslims in the population.

The rural/urban divide including internal migration

About 41 percent of the population is urban in 2005. The urban divide is very important to the topic of this study. Indeed, Islam was for a long time and urban religion that spread from the coastline to the mainland in Tanganyika. This is not to say that urbanization will necessarily go hand in hand with Islamization. It is also the case that internal migration played an important role in the spread of Islam from Zanzibar and the urban center of the coastline to the mainland and the rural areas through traders and, more recently, through preachers, nationals and foreigners.

Conclusions

Analysts speculated about the future of the Muslim population in Tanzania and in East Africa in general with the future of the independent nations of East Africa in mind. The issues of concern were Islamic expansion and Islamic revivalism as Ali Mazrui put it. The spread of Islam was noted and the prospect of Muslim becoming the overwhelming majority in Tanzania was forecasted. Do the hard data of the last half a century support this perception? The answer is No. In fact, the proportion of Muslim reported most likely remained stable around 30 percent at best in 1957 in Tanganyika it remained at this level in subsequent census estimates despite doubts raised about the reliability of the data. This study determined the percent of Muslim to be about 26 percent. Keeping in mind the margins of errors related to the sampling and observation biases, we are not far from the 30 percent estimate.

A recurrent claim in the literature points out to a historical bias against Muslims which developed under the colonial rule and continued in independent Tanzania. That bias lead to less access to education, employment in government apparatus, and some kind of exclusion from political positions of influence. This state of affairs is not unique to Tanzania but it affected former colonies which after gaining their independence fell under the rule of left-wing elites infatuated by Marxist ideology who adopted a nation building strategy which discounted the contribution of Muslims.

Now that Tanzania shifted to a multi-party open economy, one shall expect more access to the country's resources and more contribution of Muslims in the political and economic life. The success in this endeavor is conditional on the factors inherent to Islam and Islamic culture. My expectation is that in 10 to 25 years, Muslims in Tanzania will be fully integrated in the society and will reinvent themselves by developing their own brand of Islam in which the convergence towards some common denominator with the other religions and traditional beliefs becomes a defining characteristic. In such case, being a demographic majority matter less than being an active contributor to the country development.

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Appendices

Appendix 1:

Methods

- (1) Initial population estimated by extrapolating the total population of the census 2002 for 2.5 years forward using the inter-census growth rate. The breakdown into 5-year age groups of the estimated total is obtained by applying the proportions of females and of males in the 2002 census. The total number of Muslim females and males is calculated using the percentages obtained from DHS data. Then these totals of Muslim females and males are distributed by 5-year age groups using the relative age distributions calculated from the DHS data.
- (2) The mortality assumption is built using the life expectancies at birth of the United Nations' population prospects for Tanzania (the medium variant) and the West model of the Princeton model life tables.
- (3) Fertility assumption is built using DHS figures of Age Specific Fertility Rates (ASFRs) and Total Fertility Rates (TFRs). I obtained the actual figures from DHS 2004 for the whole country and for the regions. I forecasted the future trends by applying the figures of more advanced region to the national level. This procedure implies the assumption of spatial diffusion of birth control.
- (4) Sex ratio at birth used is 103 males for 100 females, same figure used by the UN and supported by recent scientific literature on the subject.
- (5) The forecasts are meant to be valid for the period 2004 to 2029 only. The figures beyond this year are not warranted.

Population Momentum

The population momentum is calculated using the spreadsheet from Rowland's (2003) manual and the figures of mortality and fertility for the 2025-2029 period of projection. That is a Gross Reproduction Rate (GRR) = 1.909 and a female life expectancy at birth (e_0) = 64.10 years. With these figures, the potential of growth beyond 2029 is approximately 40 percent.

Appendix 2: Age/Sex Composition of Muslims in Tanzania**Table 1**

Tanzania's Muslims: Current Estimates (2009) and Projections (2019, 2029) of Age-Sex Distribution

Age groups	Current Estimates (2009)		2019 Projections		2029 Projections	
	Females	Males	Females	Males	Females	Males
0 – 4	955585	978334	1161616	1191419	1249337	1282684
5 – 9	821122	785753	1113399	1143117	1107743	1138412
10 – 14	673526	680513	920401	944642	1130438	1161426
15 – 19	629177	615257	805211	771373	1096973	1126589
20 – 24	468313	416232	657018	663875	902896	925945
25 – 29	414017	312968	609184	595316	785097	751093
30 – 34	379455	286872	450633	400661	637324	643895
35 – 39	316616	239387	395993	299623	587873	574919
40 – 44	207002	179241	360210	271883	431889	383615
45 – 49	163617	168971	297394	223069	375676	282522
50 – 54	147814	105280	191077	162589	336069	250002
55 – 59	131348	94617	146686	146990	269988	197126
60 – 64	96444	79462	126323	85880	165924	135107
65 – 69	66518	60431	103674	69956	118225	111161
70 – 74	57271	42041	66776	50539	89840	56166
75 & +	76291	61035	70894	53065	96999	61101
Totals	5604115	5106393	7476487	7073995	9382292	9081762
Grand Total	10710510		14550480		18464050	

Table 2

Tanzania's Muslims: Current Estimates (2009) and Projections (2014, 2019, 2024 and 2029) of the Age-Sex Distributions (Percent)

Age groups	Current Estimates (2009)		2019 Projections		2029 Projections	
	Females	Males	Females	Males	Females	Males
0 – 4	17.05	19.16	15.54	16.84	13.32	14.12
5 – 9	14.65	15.39	14.89	16.16	11.81	12.54
10 – 14	12.02	13.33	12.31	13.35	12.05	12.79
15 – 19	11.23	12.05	10.77	10.90	11.69	12.40

20 – 24	8.36	8.15	8.79	9.38	9.62	10.20
25 – 29	7.39	6.13	8.15	8.42	8.37	8.27
30 – 34	6.77	5.62	6.03	5.66	6.79	7.09
35 – 39	5.65	4.69	5.30	4.24	6.27	6.33
40 – 44	3.69	3.51	4.82	3.84	4.60	4.22
45 – 49	2.92	3.31	3.98	3.15	4.00	3.11
50 – 54	2.64	2.06	2.56	2.30	3.58	2.75
55 – 59	2.34	1.85	1.96	2.08	2.88	2.17
60 – 64	1.72	1.56	1.69	1.21	1.77	1.49
65 – 69	1.19	1.18	1.39	0.99	1.26	1.22
70 – 74	1.02	0.82	0.89	0.71	0.96	0.62
75 & +	1.36	1.20	0.95	0.75	1.03	0.67
Totals	100.00	100.00	100.00	100.00	100.00	100.00

Appendix 3: Religion and Wealth of Population 15 years old and older

Table 1

Distribution of Muslims and non-Muslims by level of Wealth (percent)

Wealth Index	Muslim	Other religions	Total
Poorest	13.8	19.9	18.4
Poorer	14.7	21.4	19.7
Middle	14.2	20.8	19.1
Richer	18.8	19.8	19.6
Richest	38.6	18.1	23.3
Total	100.0	100.0	100.0

Table 2

Distribution Wealth Categories by Religion denominations (percent)

Wealth Index	Muslim	Other religions	Total
Poorest	19.1	80.9	100.0
Poorer	19.0	81.0	100.0
Middle	19.0	81.0	100.0
Richer	24.5	75.5	100.0
Richest	42.1	57.9	100.0
Total	25.5	74.5	100.0

