

Associations between women's age at first cohabitation, education and lifetime
outcomes in Kenya and Nigeria

[*Working paper*]

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ABSTRACT

Studies have shown that early marriage is negatively associated women's education and other life outcomes. However, our knowledge of possible changes in outcomes if a woman cohabits early (before her 18th birthday), but still attains high education is grossly limited. Using DHS data of Kenya (2014, n=17,805) and Nigeria (2013, n=22,789), I showed women's mean age at first cohabitation at national, subnational and rural-urban residences. Fitting multivariate logistic regression models at p-value <0.05, I explored background factors influencing girl's early exposure to cohabitation (GEEC) and correlated GEEC with individual's socio-economic outcomes in adulthood. Results show that 31% in Kenya and 48% in Nigeria cohabited early. Living in rural areas, belonging to certain sub-national, ethnic and religious groups significantly increased the likelihood of GEEC. Likewise, GEEC is significantly associated with low socio-economic outcomes, but effects are strongly attenuated by secondary education. Studies and policies should focus more on early cohabitation.

Keywords: Women, Cohabitation, Education, Age, Socio-economic outcomes, Kenya, Nigeria, Africa

INTRODUCTION

Women constitute about half (49.5%) of the world's total population (World Bank, 2017) and have great significant potentials in contributing to and advancing economies, their families, community and the world at large (UN Women, 2019). Studies have revealed that investing in women education and economic empowerment is “a direct path towards gender equality, poverty [and hunger] eradication and inclusive economic growth” (UN Women, 2019). However, attaining quality education is indisputably a necessary precursor for later economic returns. For instance, report from across the globe shows that “every additional year of primary school increases girls' eventual wages by 10-20 percent” (UN Inter-Agency Task Force on Rural Women, 2012). Thus, any factor discouraging the early education girls should call for serious concern. However, as at 2012, women constitute “more than two-thirds of the world's 796 million illiterate people” (UN Inter-Agency Task Force on Rural Women, 2012).

In many countries of the world, early marriage, forced marriage, or early marital cohabitation of girls has continued to foster gender inequality and deprive women of their fundamental rights to education (United Nations Educational, Scientific and Cultural Organization, UNESCO, 2017). This has been a common feature in many developing countries and especially in the rural areas. An empirical report by the UN Inter-Agency Task Force on Rural Women (2012) reveal that in 42 countries, “rural girls are twice as likely as urban girls to be out of school” at the primary level. Thus, indicating that majority of girls in rural areas would have no education is the trend is not reversed.

The scarcity of reliable data and in-depth studies focusing on the problems of gender inequality in education especially by identifying ingrained socio-cultural constraints upholding such constraints against girls and women have constituted a major challenge in the global drive for gender equality in education (Manning & Cohen, 2015). In this study, we identify one of such challenges – girls age at first cohabitation. In this study, cohabitation is conceived of as a situation in which a girl or woman resides with a person of the opposite sex, either voluntarily or involuntarily, usually for sake of marriage and/or family breeding. There is a strong consensus on the conceptualization of early marriage. Early marriage is defined as “marriage of children and adolescents below the age of 18” (UNICEF, 2001;) Worse still, a number of early marriages occur when the girl is less than 15 (UN Women, 2016). Early cohabitation or early marriage of girls

usually lead to early pregnancy, dropping out of school, and subsequent low human capital, women's earnings and poverty in later life (Moore, Myers, Morrison, Nord, Brown & Edmonston, 1993; UNICEF, 1999; Manning & Cohen, 2015).

In most African societies, girls are led away into marriage or cohabitation by her parents shortly before or as soon as she is approaching puberty (See a report by Paddison in Tanzania, *The Guardian*, 2017). Sometimes teenage girls, usually in early junior secondary or late primary school, engage in secret, socially unapproved, heterosexual relationships, explore their nascent sexual urges, and get pregnant (Oyefara, 2011, p. 210-212). Often such girls withdraw from school (Oyefara, 2011, p. 211), choose, or are forced by the parents, to “move in” (cohabit) with or marry the male partner who got her pregnant (British Council Nigeria, 2012).

There is scarcity of empirical data and life course studies investigating women's timing of first cohabitation, how this affects women's continuity in education, and subsequent socio-economic status. This study investigates these three variables in a single study and adds to our understanding of the nexuses between women's cultural, ethnic and religious affiliations, timing of first cohabitation, and subsequent highest educational attainment, wealth category and occupational status in the aftermath. Giving insights from Kenya (East Africa) and Nigeria (West Africa), the study investigates and enhances our understanding in six critical areas of a woman's life course: (i) how cultural, ethnic and religious affiliation of girls influence at timing of first/earliest cohabitation, (ii) the relationship between a woman's age at first cohabitation and her highest educational attainment, (iii) how age at first cohabitation could be influenced by rural or urban residence as well as her residence within some regions, (iv) the relationship between age at first cohabitation, highest educational attainment and subsequent household wealth index, (v) the interactive effect of age at first cohabitation, highest educational attainment and subsequent household wealth category, and finally, (vi) how the interaction of women's age at first cohabitation and her highest educational attainment is related to her eventual occupational status.

Theoretical Framework and Conceptual Model

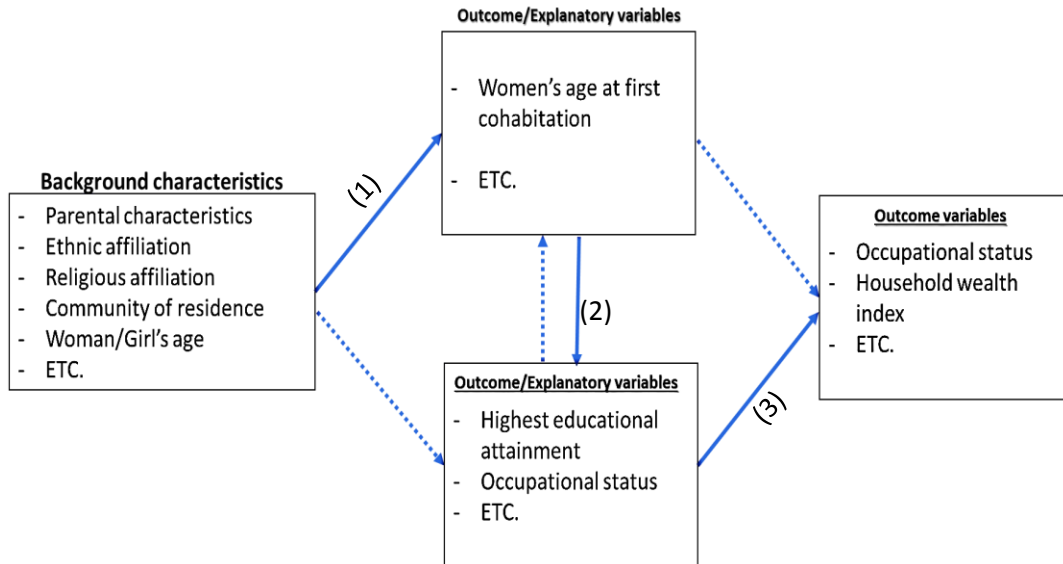
The theory of Patriarchy, well described by Burton (2017) and Mirkin (1984), has provided us with some useful background information on why some societies view women and girls are the property of men and have one main goal – to serve and please men. In patriarchal societies, gender roles are cast in bricks, and every institution, tradition and custom seem carefully organized to

satisfy the male gender. Women are socially perceived as men's property, and girls, the future property of some men. To this end, girls are either betrothed from infancy or "given out" early in marriage (before she is 18) by her parents, to a man usually quite older than she – sometimes as old as her father or grandfather. Her former education is usually not fully supported, instead she gets training from her mother on how to be a good wife to a man in future. Young girls in patriarchal societies hear this mantra almost all the time and often get to internalize it. House resources are spent on the male child in the family if parents value education to some degrees. Girls education particularly suffer more in rural areas when compared to the urban areas. Thus, in patriarchal societies, girls who cohabit early or enter into early marriage may not necessarily have chosen to of their own volition but are victims of parental and societal prescriptions and patterns.

Another relevant theory is the theory of Globalization, Skill-mismatch and the development of the underclass as expounded in Oyefara (2011) in his study among adolescent mothers in Nigeria. The theory proposes that as societies move away from traditional less-skill demanding agriculture to modern ones with industries demanding workers who are highly skilled and well educated usually beyond the primary and secondary school levels, "poorly educated people would be grossly disadvantaged" (Oyefara, 2011, p. 83). Girls marrying or cohabiting early may truncate her possibilities of continuing her education beyond Primary/Secondary levels since cohabitation is often characterized by frequent sexual activity, pregnancy, fertility and other time-demanding roles. At this low level of human development, such a girl (or woman) end up in the poor, poorer or poorest wealth quintile. However, it might be difficult to attribute the wealth of the household solely to the girl/woman since her husband's income and purchasing power could lift the household on the wealth quintile. Notwithstanding, as it shall be demonstrated in this study, our data showed that although men are usually relatively more educated than the wife, the educational gap is not too far apart, somewhat suggesting that men marry someone of lower or similar educational status, women with "No education" or "Primary" only are less likely to be married to men with Higher education. As this is not the main objective of this study, we employed another indicator of life outcome – women's occupational status. This is more personal and seems to measure the woman's socio-economic status more directly. (See Figure 1 below).

From the foregoing, we argue that (1) certain parental, communal or cultural background encourages cohabitation before age 18. (2) This early cohabitation of girls before age 18 (or 15)

in-turn discourages continued education up to the secondary school level¹. (3) Finally, low education result in poor occupational status and/or being in the “Not rich” (Poor) wealth category. See Figure 1 below:



The dotted arrows symbolize possible paths of relationships but not of interest in the current study. The thick arrows show patterns of relationship of immediate interest.

Figure 1: The Conceptual Framework for Analyzing the Complex Relationship between Women's Age at First Cohabitation, Highest Educational Attainment and Later Occupational Status/Wealth

Study hypotheses

From the foregoing, we hypothesize that:

1. Women who reside(d) in an environment where inclination and adherence to ideals of traditional gender roles is strong, such as in rural areas, and certain communities (subnational Regions and ethnic backgrounds are used as proxy), will be more likely to

¹ We admit that it is very possible that parental status, for example, parental wealth or gender values, among others, rather than early cohabitation, could be the direct reason for discontinuing a girl's education. Likewise, usually for adult women, years of schooling could influence the age at first cohabitation or marriage, instead of the reverse. However, for the current study, we are interested in the influence of, or relationship between, age at cohabitation on women's highest educational attainment.

report cohabiting before the adult age of 18 compared with women who reside(d) in urban areas or other communities, where such ideals are less accepted and practiced.

2. Women who cohabited before age 18 will be less likely to continue up to education or have Secondary school education compared to their counterparts who cohabited only after 18.
3. Women who have less than secondary education will be more likely to be in the Poor household category compared to their counterparts who attained Secondary education and beyond.
4. Finally, women who cohabit before age 18 but continue to study up to the Secondary school level will be more likely to be employed in the top (professional, technical and managerial) occupational cadre compared with women who cohabited before or after age 18 but did not attain up to Secondary education.

Methods

Study Setting

The two countries in this study, Kenya and Nigeria, have certain important characteristics in common. First, both are in sub-Saharan Africa: Kenya on the eastern and Nigeria on the western coasts of Africa. Recently, both countries have witnessed growth in their Human Development Indicator (HDI) values – a summary measure for investigating long-term progress in education, health and income levels. Kenya rose from low HDI 0.490 in 2005 to medium HDI 0.590 by 2017, and Nigeria from low HDI 0.465 to relatively higher but still low HDI 0.532, during the same period (UNDP, 2018a; UNDP, 2018b). For information on ranking of HDI, see the footnote². The GNI per capita (PPP, 2017) of both countries are ranked “Lower middle income” – Kenya (\$3,250), Nigeria (\$5,680) (Population Reference Bureau, 2019; World Bank, 2018). Nigeria is currently the largest single black country in the world with an estimated total population of 195.9 million, and Kenya 51.0 million people, with a Total Fertility Rate of 3.9 and 5.5, respectively (Population Reference Bureau, 2019).

² According to the United Nations Development Programme (2018) *Technical Note*, countries HDIs are ranked from 0 (lowest) to 1 (highest possible). HDI categories are as follows: Very high human development 0.800 and above; High human development 0.700–0.799; Medium human development 0.550–0.699; Low human development Below 0.550.

Both societies are patriarchal, multi-ethnic with indigenes expressing membership of various religion; most dominant are Christianity, Islam, Traditional, and others. Interestingly, both countries witnessed a similar history of the advents of European Christian missionaries and their activities, especially the establishments of formal schools, hospitals and Christian places of worship, among others. During and after the Berlin Conference of 1885/86, which witnessed the partitioning of Africa and the forceful merging and mapping of previously scattered settlements into united countries with boundaries, both Countries were formed and came under British Colonial rule till independence in the late 20th century. The impact of colonialism and neocolonialism have been the propagation of formal education as the new ideal, with continuous enrolments ever since into Primary, Secondary and Higher educational institutions ever since.

In both countries, women are traditionally confined to certain gender roles. Traditionally, men are usually expected to be the head and breadwinner of the household while women do domestic duties, cook meals for the household and produce and rear the children. The Gender Development Index³ (GDI) – disaggregate the HDI by sex and measures gender inequality as a ratio of the female HDI to the male HDI – of both countries are reveal high gender gap in education, health and income: Kenya (HDI for females 0.568, HDI for males 0.610, resulting in a GDI value of 0.931) and Nigeria (HDI for females 0.494, HDI for males 0.569, resulting in a GDI value of 0.868). Comparatively, females have lower HDI than males on the average in both countries, but Kenya internally performs better than Nigeria on female-male HDI (GDI).

Study Design

The study employed the 2014 Kenya Demographic and Health Survey and 2013 Nigeria Demographic and Health Survey. The DHS is a nationally representative cross-sectional survey involving women aged 15-49 (and sometimes, men 15-59). It contains information individual woman's socio-economic, national, regional, residential, and ethnic backgrounds, her marital

³ The Gender Development Index (GDI) measures gender inequalities in achievement in three basic dimensions of human development: health, measured by female and male life expectancy at birth; education, measured by female and male expected years of schooling for children and female and male mean years of schooling for adults ages 25 years and older; and command over economic resources, measured by female and male estimated earned income.

history, reproductive health, level of empowerment, (sometimes) her historical or current experiences of gender violence or abuse, among others. The survey datasets are publicly available upon free successful registration and permission at www.dhsprogram.org and this afford the opportunity to investigate women's educational.

Since the main goal of the study is to investigate how women's lifetime enrolments in education and/or formation of early cohabitation affect their current life outcomes (wealth and occupational structure), only women aged 25 years and above were kept in the analysis. All women younger than 25 were removed from the data. A total of 40,594 ever-in-union women (Kenya – 17,805; Nigeria – 22789). All data were weighted using individual country weights and countries are analyzed independently⁴.

Methods

Multivariate logistic regression models were fitted uniformly for each country to derive the independent associations between the various explanatory historical factors identified in the conceptual framework on women's life outcomes.

Measurements and coding

Dependent Variable

Our analysis involved four steps, implying that there are four main *dependent* variables systematically in this study. This helps to understand the trajectory of women's life course in logical order. (See Figure 1).

1: Woman's age at first cohabitation. For a deeper understanding of the influence of certain socio-cultural characteristics on age at first cohabitation, we coded this variable in two ways. Two dummy variables were generated. (i) All women who narrated an age of first cohabitation younger than 18 were coded "1", otherwise "0". (ii) We further investigated this by creating a second timing. All women who narrated cohabiting younger than 15 were coded "1", otherwise "0". The

⁴ Not pooling the datasets affords the opportunity to disaggregate data and estimate at subnational levels.

second dependent variable was only used to show how deeply-rooted early cohabitation could be in the countries at national and various subnational levels.

2: Woman's highest educational attainment: This is measured as a dummy variable, Women who have less than Secondary Education were coded "0", all Secondary and Higher=1.

3: Woman's Wealth category: This variable, originally an ordinal scale ranging from 1 to 5 (1=poorest, 2=poor, 3=middle, 4=richer, 5=richest) was recoded into binary variable *Poverty*⁵: Rich (4, 5) = 0, Not Rich (1, 2, 3) = 1.

4: Woman's Occupational Hierarchy: Another binary variable, woman is in either a Professional/Technical/Managerial Position = 1; Otherwise = 0.

Note that these dependent variables were equally used as independent variable depending on the model and which is used as the outcome variable.

Independent variables

The following are the general independent variables.

⁵ Household wealth index is used as a proxy for Poverty. The DHS program normally uses "household conditions, sources of drinking water, sanitation facilities, availability of electricity, housing facilities, possession of household durable goods, and ownership of household effects and land" to create the wealth index (NDHS, 2014, p. 38; KNBS and ICF Macro, 2014, p. 45). However, it should be noted that Household wealth does not exclusively measure the economic status of the woman alone, but also that of her husband. Notwithstanding, it is still a useful proxy on two grounds: homogamy theories (Uunk, 1996; Arum, Roksa, & Budig, 2008) have suggested that people often marry people having common educational and socioeconomic status origins. Second, I investigated this proposition by conducting a simple investigation using the study's datasets and found that as expected women who had secondary education or Higher were more likely to be in union with men who have similar Secondary or Higher educational status. Although attainment of common educational status may not necessarily translate into having equal occupational and attendant income opportunities owing to several realities of gender discrimination. Notwithstanding, instead of weakening the use of this variable, the evidence of homogamy in the dataset would strengthen it. Would a woman need at least Secondary and/or Higher education to escape being or marrying into Poor households? Another way I overcame this challenge was to test women's occupational status (See Dependent Variable 4).

1. Residence: This is a very important variable in this study considering the amount of information available on its relationship to patriarchy and gender inequality norms. Women who reside in Urban areas=1; Rural=2.
2. Ethnic affiliation: Another important factor that can influence women's early cohabitation. Both countries are multiethnic. Seven ethnic groups with the largest sample representation in the Kenya dataset (with our coding) are the Kalenjin=1, Kamba=2, Kikuyu=3; Kisii=4, Luhya=5; Luo=6, Somali=7, Others=8. Nigeria has 3 main ethnic groups among the over 250 in the Country: Hausa/Fulani=1, Igbo=2; Yoruba=3; Others=4.
3. Religion: Another equally important variable, Catholics=1; Protestant/Other Christians=2; Islam=3; Traditional and others=4. Owing to evidences in literature (see Pierotti, 2011, analysis for example), Religion was further recoded in some instances into dummy variables of Muslim=1, Non-Muslim=2.
4. Region: This is one reason while analysis was done independently for the two countries to report both at bivariate and multivariate levels the exact region with highest rates of early cohabitation. According to the DHS dataset, Kenya has 9 regions, while Nigeria has 6.
5. Woman's current age group: Remember all women are in the study are 25 years and above. Current age was treated as an ordinal categorical variable: 25-29=1; 30-34=2; 35-39=3; 40-45=4; 45-49=5.

Models fitted

Multivariate data analysis involved six (6) binary logistic regression models (Appendix 1). Models 1 and 2 test the relationships between women's background characteristics and likelihood of cohabiting before ages 15 and 18, respectively. Model 3 finds the connection between age at first cohabitation and women's highest educational attainment. Model 4 explores the relationship between age at first cohabitation, highest education attained and household wealth (conversely, the likelihood of escaping poverty by marrying into a wealthy household). Model 5 investigates the association between age at first cohabitation, highest education and woman's later occupational status. Finally, model 6 explores the complex relationship between age at first cohabitation interacted with highest education and woman's household wealth.

Results

Importantly, univariate and bivariate results (along Regional and Residential lines with chi-square tests of significance) are presented first. This is followed by multivariate logistic

regressions. All data are weighted to reflect true population sampling estimates and minimize sampling errors.

Socio-demographic characteristics of the study population

The current mean age of the 25-49 women is 34.8 (Kenya) and 35.2 (Nigeria) with standard deviation of 6.9 and 7.2 years, respectively. The Nigerian women reported higher number of Children Ever Born (CEB) than the Kenyan women (mean of 4.8 to 4.1), surviving children (mean of 4.1 to 3.8), and maximum number of CEB by a single woman reaching as high as 18 children in Nigeria to 15 children in Kenya. Women who cohabited earlier than 18 years reported having more children on the average (5.1 Kenya, 5.8 Nigeria) than women who cohabited only after 18 (3.5 Kenya, 3.7 Nigeria). See Table 1 below for details.

Table 1: Summary statistics of means, standard deviations and ranges of selected variables

Variable	Current age		First Cohabitation age		Surviving children		Children ever born (CEB)	
	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria
Country	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria
Minimum values	25	25	9	10	0	0	0	0
Mean	34.8	35.2	19.4	18.4	3.8	4.1	4.1	4.8
Std. Dev.	6.9	7.2	4.3	5.0	2.1	2.2	2.3	2.8
Maximum values	49	49	46	46	14	16	15	18
Observations	18158	22695	18158	22695	18158	22695	18158	22695

Variable	Total CEB if she cohabits before 18		Total CEB if she cohabits after 18		Children ever born (CEB)	
	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria
Country	Kenya	Nigeria	Kenya	Nigeria	Kenya	Nigeria
Minimum values	0	0	0	0	0	0
Mean	5.1	5.8	3.5	3.7	4.1	4.8
Std. Dev.	2.3	2.7	2.1	2.4	2.3	2.8
Maximum values	14	18	15	15	15	18
Observations	6310	11763	11848	10932	18158	22695

*CEB – Children Ever Born (average number of all live births whether living or dead)

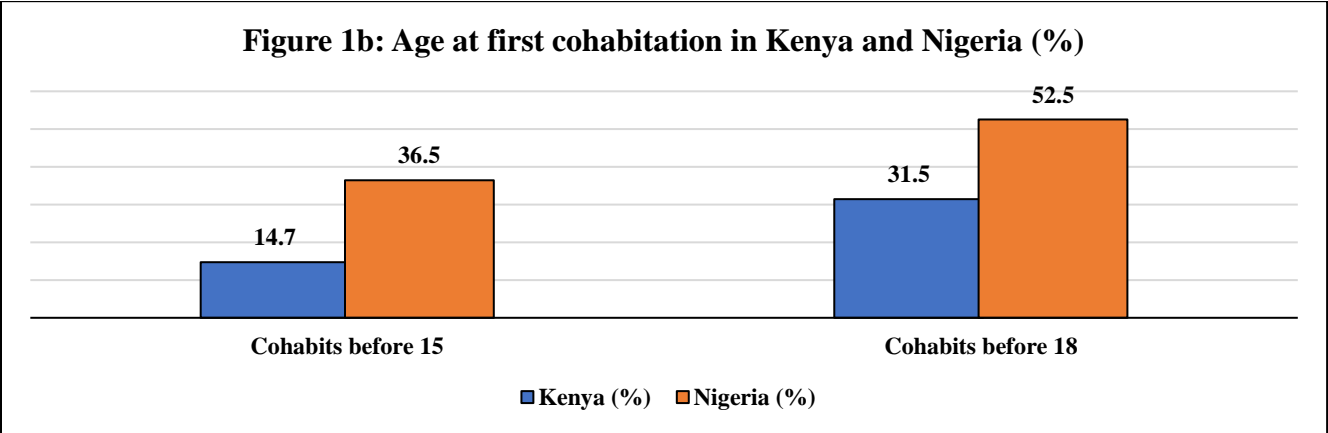
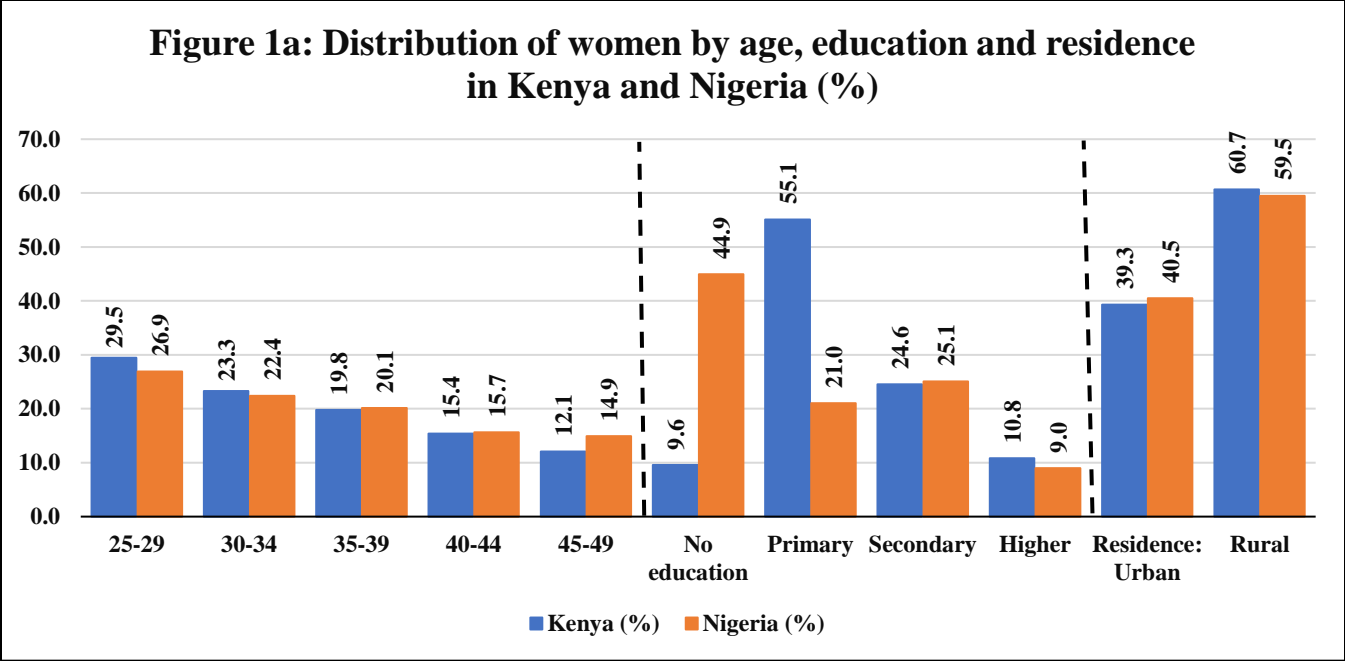
Closely, more than half of the women (60.7% in Kenya; 59.5% in Nigeria) were sampled from the rural areas, with 39.3% and 45.8% from the urban areas, respectively (see Tables 2, and Figures 1a and 1b). Early cohabitation in both countries are staggering high. In Kenya, 2.3% cohabited before age 12, 14.7% before 15, and 31.5% (nearly one-third) cohabited before age 18. In Nigeria, 7.2% of the women cohabited before age 12, more than one-third (36.5%) before 15, and more than half (52.5%) before adult age of 18 years. However, mean age at first cohabitation stood at 19.4 years in Kenya, and 18.4 years in Nigeria.

There is wide disparity in female educational attainment between the two countries (see Table 1 and Figure 1a, 1b). While only about one-tenth (9.6%) of the women in Kenya reported having had No formal education, just less than half of the women in Nigeria (44.9%) reported having No formal education⁶. In Kenya, more than half (55.1%), one-fourth (24.6%) and one-tenth (10.8%) have had Primary, Secondary and Higher education, respectively. Using the same order in Nigeria, about one-fifth (21.0%), one-fourth (25.1%) and less than one-tenth (9.0%) of the women attained such educational categories. In summary, 64.6% and 35.4% of women in Kenya, compared with 65.9% and 34.1% of women in Nigeria, had education “Less than Secondary” and “At least Secondary and above”.

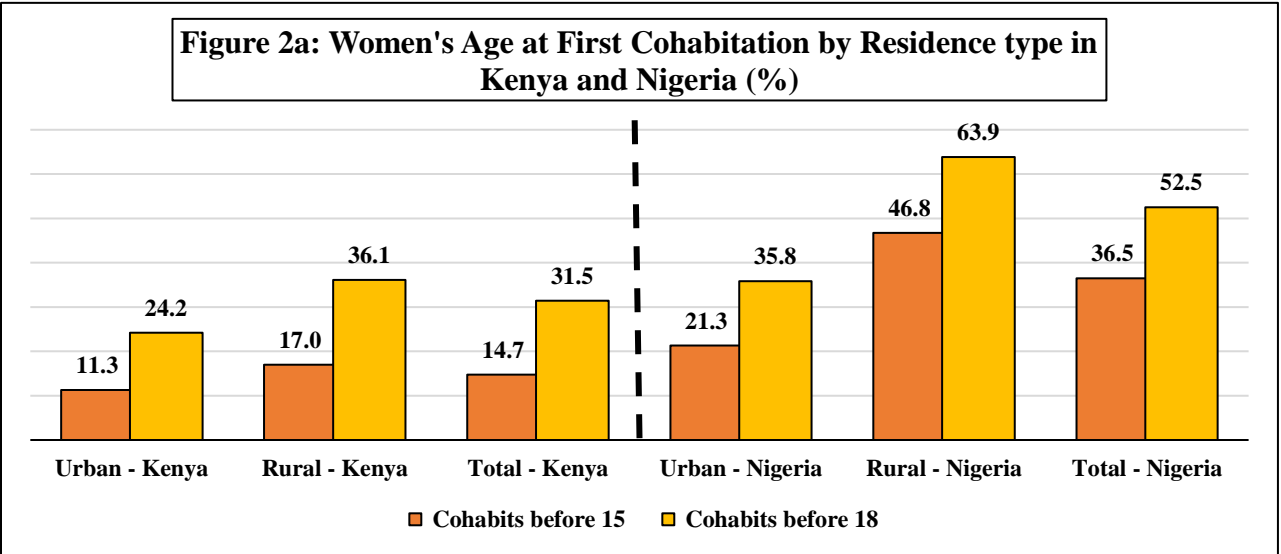
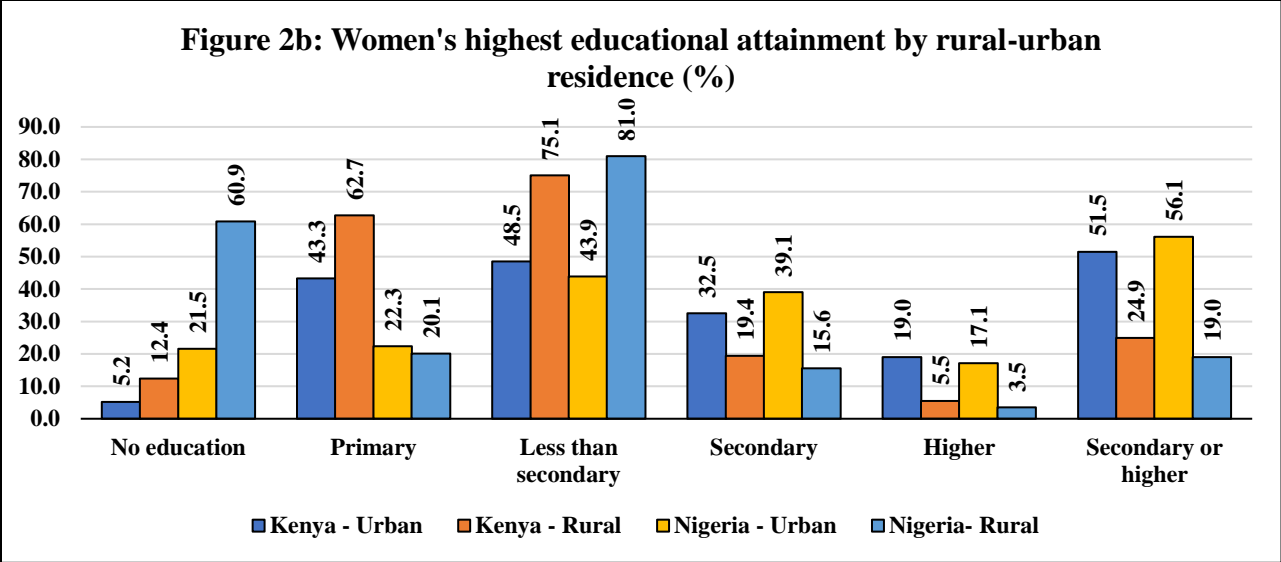
Table 2: Socio-demographic characteristics of the respondents in Kenya and Nigeria

Profiles	Kenya (%)	Nigeria (%)	Highest education:	Kenya (%)	Nigeria (%)
Current age:			No education	9.6	44.9
25-29	29.5	26.9	Primary	55.1	21
30-34	23.3	22.4	All less than Secondary	64.6	65.9
35-39	19.8	20.1	Secondary	24.6	25.1
40-44	15.4	15.7	Higher	10.8	9
45-49	12.1	14.9	All Secondary and above	35.4	34.1
Mean age (S.D.)	19.4 (4.3)	18.4 (5.0)	Wealth index:		
Age at first cohabitation:			Poor	33.7	40
Cohabits before 15	14.7	36.5	Middle	19.3	18.3
Cohabits after 15	85.3	63.6	Rich	47	41.6
Cohabits before 18	31.5	52.5	Religious affiliation:		
Cohabits after 18	68.6	47.5	Catholic	19.5	9.7
Residence:			Other Christians	71.6	34.4
Urban	39.3	40.5	Islam	6.9	54.2
Rural	60.7	59.5	Traditional and others	2	1.7
Total (%)	100	100	Total (%)	100	100
Total observation	17,805	22789	Total observation	17,805	22789

⁶ We know from further statistical investigation of the data that majority of such women are from the northern regions in Nigeria.

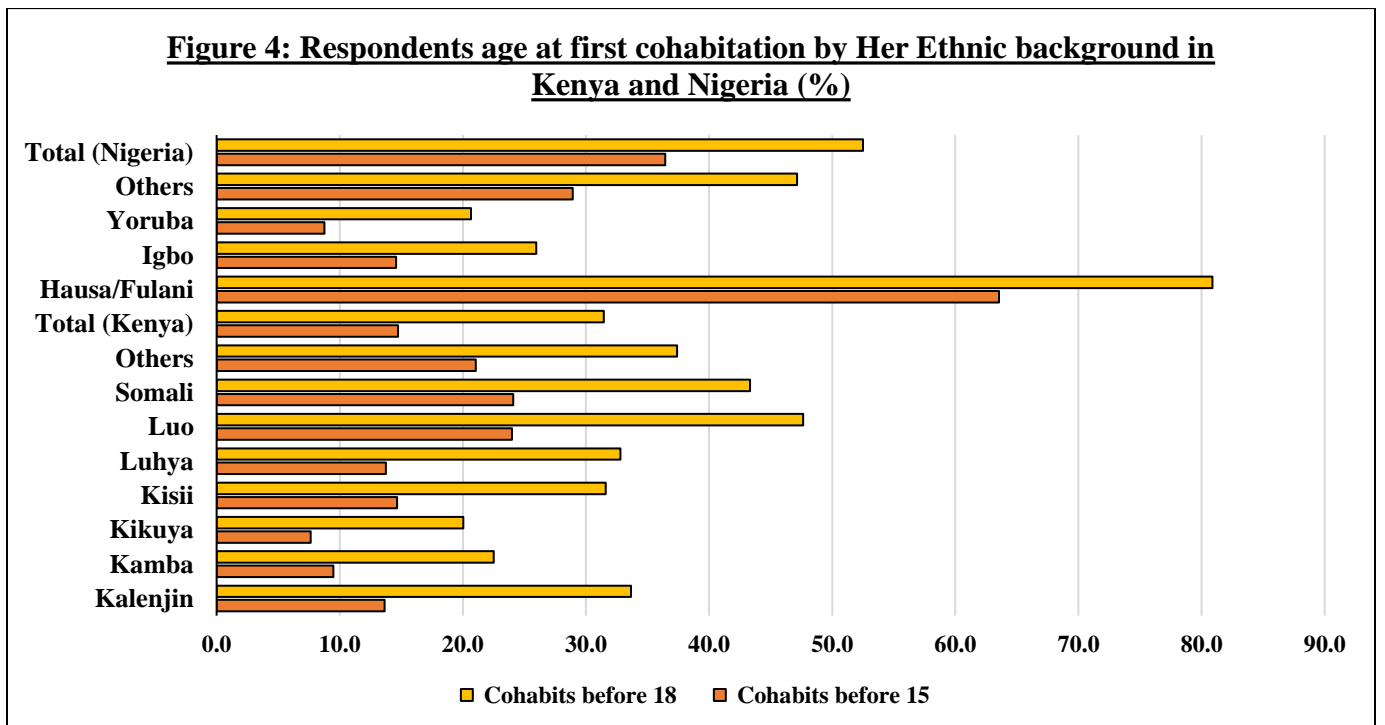
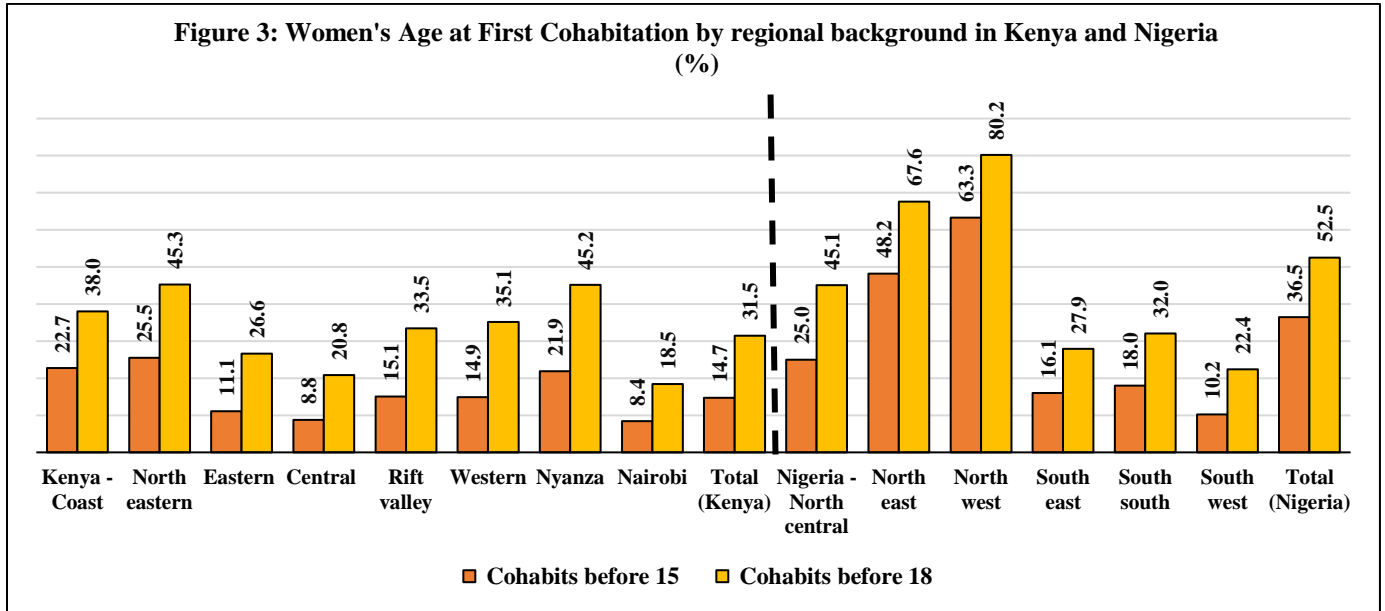


I decomposed Age at First Cohabitation by background characteristics and tested the result for its statistical significance at bivariate level (see Figure 2a, 2b). As expected, women from rural areas than from urban areas were more likely to have cohabited early before age of 15: Kenya (17.0% in rural, 11.3% in urban, p -value < 0.000; Nigeria – 46.8% in rural, 21.3% in urban, p -value < 0.000. Percentage of women cohabiting before age adult age of 18 were: in Kenya (24.2% - urban, 36.1% - urban, 31.5% national), and in Nigeria (35.8% - urban, 63.9% rural, 52.5% national). By implication, more than half of women in Nigeria, about more than one-third in Kenya, already cohabit before the adult age of 18. This is worse in rural areas and of course, could bear heavily subsequently on the educational attainments, wealth and occupational status of this women in the aftermath.



By regional background (see Figure 3), one-fourth of women in North Eastern region (25.5%) and more than one-fifths of women in the Coasts (22.7%) and Nyanza (21.9%) regions of Kenya reported cohabiting before age 15. In Nigeria, more than half of the women in North West (63.3%), about half in North East (48.2%), and one-fourth in North Central (25.0%) regions cohabited before age 15. With the exclusion of three regions: Eastern (26.6%), Central (20.8%) and Nairobi (18.5%) regions, at least one-third of women in other Kenya's regions (ranging from 33.5% to 45.3%) cohabited early before 18 years. In Nigeria, cohabitation before 18 years is likewise very rampant; from one-fifth (22.4%) in South West to more than half (80.2%) in North

West. In summary, the following regions in ascending order have high numbers (more than one-third) of women who cohabited before age 18: Kenya (Rift Valley, Western, Coast, Nyanza, North Eastern) and Nigeria (South South, North Central, North East, North West).



Further decomposition by ethnic and religious backgrounds show some ethnic and religious groups with very high rate of early cohabitation (see Figures 4 and 5). By ethnic origin, the Luo

(24.0%, 47.7%) and the Somali (24.1%, 47.7%) ethnic groups of Kenya, and the Hausa/Fulani (63.6%, 80.9%) tribes of Nigeria, manifest the highest likelihood of cohabiting before age 15 and 18 years, respectively.

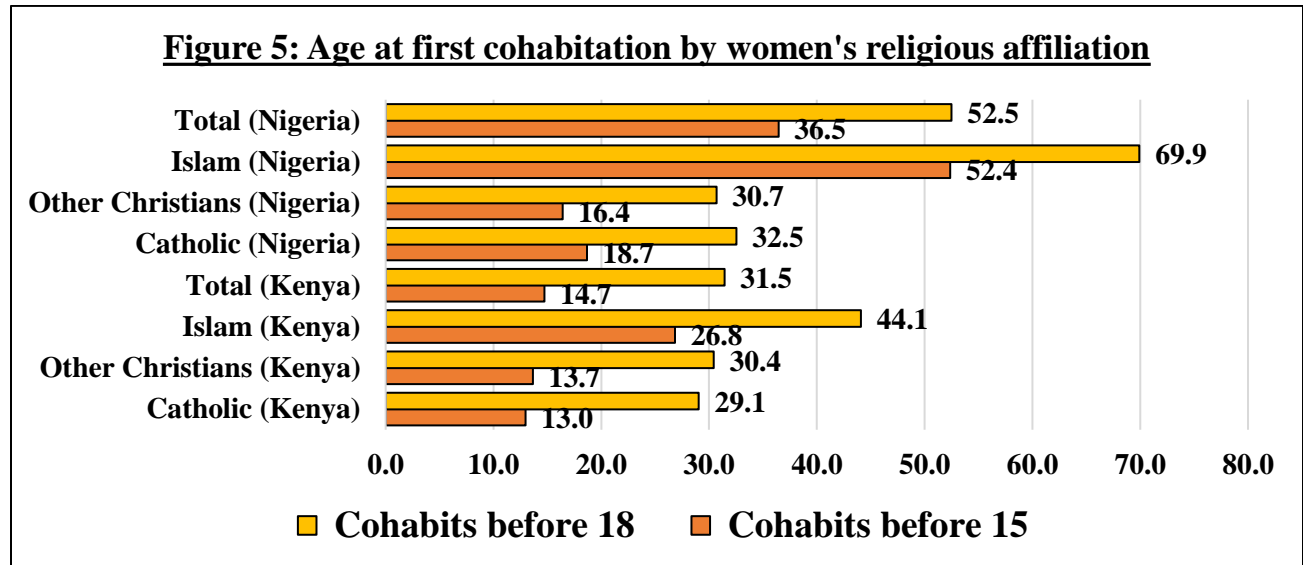
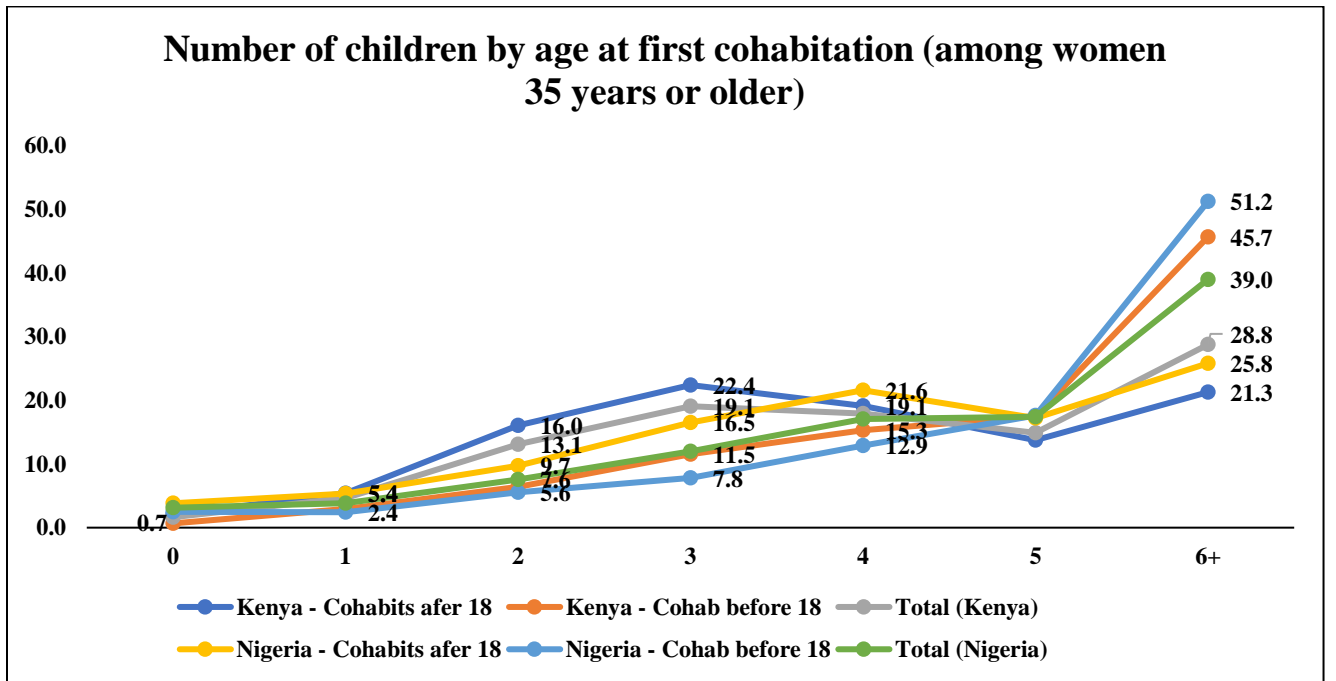
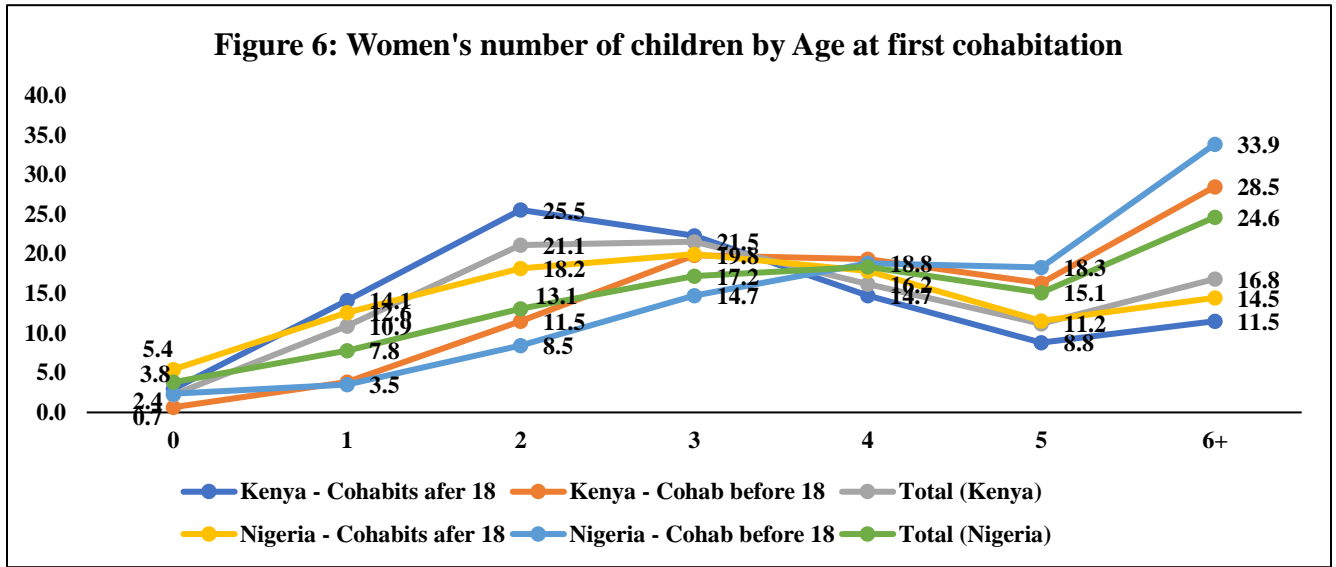


Figure 5 shows that women who belong to the Islamic religion are much likely to cohabit before age 15 or 18 among others in both countries. Nigeria reveals higher percentages: more than half of the Nigerian Moslem women already cohabited before age 15; in Kenya, more than one-fourth. Majority of these Nigerian Moslem women belonged to the predominantly Islamic Hausa/Fulani ethnic groups resident in the northern regions of the Country. A similar pattern is observable in Kenya among the prominently Islamic Luo and Somali ethnic identities who are resident in Northeastern and Nyaza regions of Kenya. It is striking to find that by age 15 and 18, 52.4% and 70% of Muslim women in Nigeria, 26.8% and 44.1% of Muslim women in Kenya, had experienced first cohabitation. Cohabitation before age 15 or 18 could hold severely damaging socio-economic and human capital development disadvantages for women in their later life. The following sections therefore investigate and present the likely *roots* and *effects* of age at first cohabitation at multivariate levels.

Figure 6: Number of living children by women 25-49 by age at first cohabitation



Figures 6 and 7 describes the pattern of relationship between women’s age at first cohabitation and her number of [living] children. Figure 6 involves all women 25-49 years in the study; meanwhile Figure 7 involves only women in older ages of 35-49 years at the time of the survey. As expected, women who cohabited before age 18 not only had more children in both countries (51.2% in Nigeria and 45.7% in Kenya have at least 6 surviving children) and were also less likely to be childless by age 35. Converse is true for women who cohabited only after age 18. In patriarchal

cultures where childbearing is considered an important traditional gender role of women, rather than attaining education, and often a legitimizing (if fertile) or stigmatizing (if barren) yardstick, women who cohabited before 18 ideally escapes the barrenness stigma. Further investigations are needed to examine social tradeoffs between modern female education and its consequent social mobility, on the one hand, and early marriage and its attendant female fertility which characterizes traditional societies.

Results of Multivariate Logistic Regression Models

The six models fitted reveal very informative results. See Tables 2 and 3 for the Adjusted odds ratios report for Kenya and Nigeria, respectively. Each model is hereby explained below.

1. Socio-cultural factors promoting cohabitation before ages 15 and 18

What socio-cultural factors are associated with women who cohabit before age 15 or 18? Models 1a and 1b (presented in Tables 2 and 3 for Kenya and Nigeria, respectively) reports associations between women's socio-cultural, ethnic, regional, residential, and religious backgrounds and her likelihood of experiencing cohabitation before age 15, and 18 in Kenya and Nigeria.

Comparing the ethnic groups within each country, except for Somali women in Kenya for which the relationship is not significant, women from the Luo tribes were most likely to cohabit before age 15 and 18. Women from the Kikuya (aOR 0.32, 0.42), Kisii (aOR 0.54, 0.51) tribes were less likely to cohabit early compared to the Luo. In Nigeria, the Hausa/Fulani people were most likely to cohabit before either age 15 or 18 while the Yoruba and Igbo were least likely. These results are statistically significant p-values < 0.001. At regional levels, compared to women in Nairobi, women in the following regions were in descending order more likely to cohabit before ages 15 or 18: North Eastern (aOR 2.05, CI. 1.19 - 3.56), Nyanza region (aOR 2.03, CI. 1.39-2.96), Western region (aOR 1.65, CI. 1.13 - 2.41). In Nigeria, compared to women in the North Central region, women in North East (aOR 1.79), North West (aOR 2.59), South East (aOR 1.47 – only significant at age 15, not 18) were more likely; women in South West (aOR 0.73) were less likely.

As expected, women in rural areas were (aOR 1.48 in Kenya; aOR 1.92 in Nigeria) more likely to cohabit before 15 and 18 than women in urban areas. However, in both countries, women who belonged to the Islamic religion were more likely to cohabit earlier at ages 15 and 18 than women who identified as Catholics or Other Christian groups. Women belonging to the Traditional

religious group were not statistically significant in both countries compared to the Muslims. However, when I adjusted the model to a simple binary logistic regression model (that is, I excluded all the other variables), the relationship turned significant, but only in Nigeria. The Traditional religious women were less likely to cohabit before age 15 (OR 0.53, CI 0.41-0.69, $p < 0.01$) or before age 18 (OR 0.48, CI 0.37-0.64, $p < 0.001$) just as others, compared to the Muslim women.

2. Relationship between women's highest education and age at first cohabitation

To what extent does cohabiting before the adult age of 18 affect women's likelihood to attain up to Secondary or Higher education? In both countries, compared to women who cohabited after 18, women who cohabited before age 18 were less likely to attain up to Secondary education in Kenya (aOR 0.21, CI 0.19-0.24, $p < 0.001$) and Nigeria (aOR 0.30, CI 0.27-0.33, $p < 0.001$). This lends more evidence to the detrimental effects of early cohabitation on female education. In contradistinction to previous association between ethnic background and probability of early cohabitation, only women belonging to the Kisii ethnic group were significantly more likely to attain Secondary/Higher education relative to women from Luo tribe at $p < 0.05$. In Nigeria, compared to the Hausa/Fulani ethnic groups, the Yoruba (aOR 5.94, CI 3.9-9.02, $p < 0.001$), Igbo (aOR 4.19, CI 2.4-7.2, $p < 0.001$) and Other Tribes (aOR 2.28, CI 1.6-3.3, $p < 0.001$) were less likely attain Secondary education or Higher. In both Countries, compared to the Muslim women, Catholic and Other Christian women were nearly four times more likely to attain Secondary or Higher education than the Muslim women. However, the Muslim women were more likely than Traditionalist women.

However, to what extent does women's age at first cohabitation reflect on household wealth.

Table 2: Multivariate regression result showing adjusted odds ratios for – Kenya

	Cohabits before 15 [Model 1a]	Cohabits before 18 [Model 1b]	Secondary / Higher Education [Model 2]	Not Rich / Poor Household [Model 3]	PTM occupational status [Model 4]	PTM occupational status [Model 5]	Not Rich / Poor Household [Model 6]
Ethnic group (Luo)							
Kalenjin	0.49***	0.62***	0.76	2.37***	1.31	1.31	2.40***
Kamba	0.55**	0.53***	0.63**	2.52***	0.65	0.64	2.54***
Kikuya	0.32***	0.42***	1.04	0.79	0.94	0.96	0.8
Kisii	0.54***	0.51***	2.15***	1.01	0.61	0.61	1.01
Luhya	0.58***	0.67**	0.75	1.23	0.63	0.62	1.25
Somali	0.57	0.63	0.13**	0.83	1.01	1	0.83
Others	0.93	0.82	0.45***	1.71**	0.94	0.92	1.73**
Religious affiliation (Islam)							
Catholic	0.56***	0.64***	1.50**	0.82	1.13	1.14	0.82
Other Christians	0.57***	0.65***	1.34*	0.9	0.98	0.99	0.9
Traditional & others	1.15	1.26	0.34**	2.90***	0.69	0.67	2.89***
Region (Nairobi)							
Coast	1.63**	1.72***	0.45***	3.98***	0.81	0.8	4.00***
North Eastern	2.05*	2.22**	0.24*	19.02***	0.49	0.49	19.07***
Eastern	1.03	1.40**	0.39***	4.61***	0.65	0.66	4.61***
Central	1.57*	1.51**	0.46***	3.26***	0.6	0.59	3.27***
Rift							
Valley	1.87***	2.06***	0.42***	5.66***	0.8	0.79	5.67***
Western	1.65*	2.00***	0.41***	11.60***	1.55	1.56	11.60***
Nyanza	2.03***	2.67***	0.32***	13.10***	1.05	1.06	13.13***
Residence (Urban)							
Rural ^a	1.48***	1.57***	0.34***	7.21***	0.72*	0.72*	7.19***
First cohabitation age (Cohabits only after age 18)							
Cohabits before 18	NA	NA	0.21***	1.36***	0.69**	NA	NA
Education (Less than Secondary)							
Secondary and above	NA	NA	NA	0.21***	6.33***	NA	NA

Cohabitation Age & Education (Cohabits after 18, Has less than Secondary)

	NA	NA	NA	NA	NA	NA	NA
Cohabits after 18, Has at least Secondary	NA	NA	NA	NA	NA	7.88***	0.19***
Cohabits before 18, Less than Secondary	NA	NA	NA	NA	NA	1.08	1.25***
Cohabits before 18, Has at least Secondary	NA	NA	NA	NA	NA	3.27***	0.36***
Constant	0.29***	0.60**	1.74*	0.08***	0.08***	0.07***	0.08***
Observations	18,137	18,137	18,137	18,137	8,613	8,613	18,137

Notes: The category in brackets () is the reference category; *** p<0.001, ** p<0.01, * p<0.05;

NA – Not applicable.

PTM – Professional, Technical or Managerial positions

^a indicates that the both Residence and Region were used interchangeably keeping other variables constant. When both are used in the same model, Residence turns insignificant.

Table 3: Multivariate regression result showing adjusted odds ratios for – Nigeria

	Cohabits before 15 [Model 1a]	Cohabits before 18 [Model 1b]	Secondary / Higher Education [Model 2]	Not Rich / Poor Household [Model 3]	PTM occupational status [Model 4]	PTM occupational status [Model 5]	Not Rich / Poor Household [Model 6]
Ethnicity (Hausa / Fulani)							
Igbo	0.31***	0.36***	4.19***	0.33**	1.07	1.07	0.33**
Yoruba	0.22***	0.29***	5.94***	0.32***	1.59*	1.59*	0.32***
Others	0.63***	0.59***	2.28***	0.69*	1.02	1.02	0.69*
Religious affiliation (Islam)							
Catholic	0.54***	0.53***	3.90***	1.35	1.27	1.27	1.35
Other Christians	0.53***	0.57***	3.58***	1.17	1.38**	1.38**	1.17
Traditional & Others	1.02	0.88	0.56*	2.26**	0.88	0.88	2.26**
Region (North Central)							
North East	1.79***	1.66***	0.9	2.95***	1.04	1.04	2.95***
North West	2.59***	2.54***	1.19	2.09**	0.70*	0.70*	2.09**
South East	1.47*	1.23	0.61	3.59**	0.68	0.68	3.59**
South South	0.92	0.79**	1.65***	0.40***	0.8	0.8	0.40***
South West	0.73**	0.79*	0.88	0.68	0.54***	0.54***	0.68
Residence (Urban)							
Rural ^a	1.92***	1.83***	0.29***	12.57***	0.68***	0.68***	12.57***
Age at first cohabitation (cohabits only after age 18)							
Cohabits before 18	NA	NA	0.30***	1.32***	0.59***	NA	NA
Education (Less than Secondary)							
Secondary and above	NA	NA	NA	0.14***	23.73***	NA	NA

**Cohabitation Age & Education
(Cohabits after 18, Has less than
Secondary)**

Cohabits after 18, Has at least Secondary	NA	NA	NA	NA	NA	24.91***	0.14***
Cohabits before 18, Less than Secondary	NA	NA	NA	NA	NA	0.65	1.32***
Cohabits before 18, Has at least Secondary	NA	NA	NA	NA	NA	14.56***	0.19***
Constant	0.76**	1.25*	0.34***	0.60*	0.01***	0.01***	0.60*
Observations	22,695	22,695	22,695	22,695	22,695	22,695	22,695

Notes: The category in brackets () is the reference category; *** p<0.001, ** p<0.01, * p<0.05;

NA – Not applicable.

PTM – Professional, Technical or Managerial positions

^a indicates that the both Residence and Region were used interchangeably keeping other variables constant. When both are used in the same model, Residence turns insignificant.

A survey of previous studies in this research area already present some interesting but arguable results, especially if repeated within the sub-Saharan African context. For instance, in a study by Jayaweera (1997) in Asia, it was reported that there is “no positive linear relationship between education and the economic, social and political empowerment of women”. This was as a result of certain institutionalized socio-cultural and economic constraints within the family and society whose effects negatively modulate and outweigh the expected upward social-mobility effect of woman’s education on her empowerment status. This finding seems to suggest that there are certain social and cultural forces or barriers in the society whose effects on women could outweigh her guarantee of a better life in the society despite her educational attainments.

Furthermore, while attaining more education in its real sense is desirable, studies have further shown that merely attaining unreviewed “educational” trainings and subsequent certificates for girls in patriarchal societies is by itself not a guarantee for subsequent women empowerment. As argued by Longwe (1998), it should instead be questioned whether the conventional school system in its values, beliefs and *contents* are geared towards the *empowerment* or the *subordination* of women. This rhetoric is mostly important in patriarchal societies, since in many societies, the school system is organized and administered in such a way as to train and provide the society with graduates who have been trained to conform with popular societal norms. By implication, women would be trained to submit to conventionally ideal status of subordination and gender inequality dominant in patriarchal societies.

However, more recent studies have demonstrated that women who attain a desired level of education necessary for self-reliance do, in attitudes and behavior, normally manifested better standards and conditions of living than their counterparts who do not (Ahmed, Creanga, Gillespie & Tsui, 2010). The attainment of women educational for personal growth and human capital development thus become desirable as the society gradually seek to unwind its numerous institutionalized anti-women social fabrics.

One of such anti-women development challenge is early marriage. According to the United Nations Child Education, Scientific and Cultural Organization (UNESCO),

Duflo (2012) argued that the relationship between women empowerment and development may be “too weak to be self-sustaining” enough to ensure that empowering women inadvertently fosters economic development. Instead, he advocated the need for “continuous policy commitment to equality” to address the challenge of gender gap (Duflo, 2012).

Appendix

1. Y (Age at first cohabitation) = X_1 .Religion + X_2 .Residence + X_3 .Region + X_3 .Ethnicity+.....+ Error term
2. Y (Highest education) = X_1 .AgeatFirstCohabitation+ X_2 .Religion+ X_3 .Residence + X_4 .Region + X_5 .Ethnicity+.....+ Error term
3. Y (Wealth) = X_1 .AgeatFirstCohabitation + X_2 .Education + X_3 .Religion+ X_4 .Residence + X_5 .Region + X_6 .Ethnicity+.....+ Error term
4. Y (Occupational Status) = X_1 .AgeatFirstCohabitation + X_2 .Education + X_3 .Religion + X_4 .Residence + X_5 .Region + X_6 .Ethnicity+.....+ Error term
5. Y (Occupational Status) = X_1 .AgeatFirstCohabitation#Education + X_2 .Religion + X_3 .Residence + X_4 .Region + X_5 .Ethnicity+.....+ Error term

References

- Ahmed, S., Creanga, A. A., Gillespie, D. G., & Tsui, A. O. (2010). Economic status, education and empowerment: implications for maternal health service utilization in developing countries. *PloS one*, 5(6), e11190.
- Arum, R., Roksa, J., & Budig, M. J. (2008). The romance of college attendance: Higher education stratification and mate selection. *Research in Social Stratification and Mobility*, 26(2), 107-121.
- British Council. (2012). Gender in Nigeria Report 2012. *Improving the Lives of Girls and Women in Nigeria*.
- Burton, N. (2017). A Feminist Critique of Marriage: At a time of unparalleled social freedom, can we imagine a better way of living? *Psychology Today*, August 04, 2017. From <https://www.psychologytoday.com/us/blog/hidden-and-see/201708/feminist-critique-marriage>.
- Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic literature*, 50(4), 1051-79.
- Jayaweera, S. (1997). Women, education and empowerment in Asia. *Gender and Education*, 9(4), 411-424.
- Kenya National Bureau of Statistics (KNBS) and ICF Macro (2014). Kenya Demographic and Health Survey 2014. Calverton, Maryland: KNBS and ICF Macro.
- Kreager, D. A., Felson, R. B., Warner, C., & Wenger, M. R. (2013). Women's education, marital violence, and divorce: A social exchange perspective. *Journal of marriage and family*, 75(3), 565-581.
- Longwe, S. H. (1998). Education for women's empowerment or schooling for women's subordination?. *Gender & development*, 6(2), 19-26.
- Manning, W. D., & Cohen, J. A. (2015). Teenage cohabitation, marriage, and childbearing. *Population research and policy review*, 34(2), 161-177.
- Mirkin, H. (1984). the passive female the theory of patriarchy. *American Studies*, 25(2), 39-57. Retrieved this March 9, 2019 from https://www.jstor.org/stable/40641862?seq=1#page_scan_tab_contents.
- Moore, K. A., Myers, D. E., Morrison, D. R., Nord, C. W., Brown, B., & Edmonston, B. (1993). Age at first childbirth and later poverty. *Journal of research on adolescence*, 3(4), 393-422.
- National Population Commission (NPC) [Nigeria] and ICF International (2014). *Nigeria Demographic and Health Survey 2013*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.
- Oyefara, J. L. (2011). Socio-cultural context of adolescent fertility in Yoruba society: Insights from Osun State, Nigeria. Concept Publications Limited, Lagos, Nigeria.

Paddison, L. (2017). Educating girls: the key to tackling global poverty. The Guardian, Wednesday 4, October 2017. Retrieved March 9, 2019, from <https://www.theguardian.com/opportunity-international-roundtables/2017/oct/04/global-poverty-child-marriage-education-girls>

UN Inter-Agency Task Force on Rural Women. (2012). Facts and Figure: Rural Women and the Millennium Development Goals. Retrieved this 9th March 2019 from <http://www.un.org/womenwatch/feature/ruralwomen/facts-figures.html>.

UNESCO (2017). Women's and Girls' Education. Retrieved online on March 9, 2019 from UNESCO Office in HA NOI <http://www.unesco.org/new/en/hanoi/education-for-the-21st-century/womens-and-girls-education/>.

UNICEF (2003). Speeches On Girl's Education and Poverty Eradication. Delivered on 6 July 1999, Geneva, Switzerland.

United Nations Children's Funds. (2001). Early Marriage – Child Spouses. Innocent Research Centre. Florence, Italy. Retrieved this 10th March 2019 from <https://www.unicef-irc.org/publications/pdf/digest7e.pdf>.

United Nations Development Programme (2018a). Human Development Indices and Indicators: 2018 Statistical Update. Briefing note for countries on the 2018 Statistical Update. Kenya. New York: UNDP.

United Nations Development Programme (2018b). Human Development Indices and Indicators: 2018 Statistical Update. Briefing note for countries on the 2018 Statistical Update. Nigeria. New York: UNDP.

United Nations Development Programme (2018c). Human Development Indices and Indicators: 2018 Statistical Update. Technical Notes. New York: UNDP

United Nations Women. (2016). Child Marriages: 39,000 every day-More than 140 million girls will marry between 2011 and 2020. *Retrieved 2nd March*.

United Nations Women. (2019). Economic empowerment. Retrieved this 9 March 2019 from <http://www.unwomen.org/en/what-we-do/economic-empowerment>.

Uunk, W. J. G. (1996). *Who marries whom?: the role of social origin, education and high culture in mate selection of industrial societies during the twentieth century* (Doctoral dissertation, [SI: sn]). Assessed March 18, 2019 from https://repository.ubn.ru.nl/bitstream/handle/2066/146206/mmubn000001_221980776.pdf.