

PARTNER AGE DIFFERENCE AND FERTILITY IN UGANDA.

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ABSTRACT

Background: High fertility in developing countries like Uganda is straining social and economic resources as well as the country's development opportunities. It has also been observed as an impediment to the achievements of national policies as well as individual goals.

Methods: A nationally representative sample of 917 Ugandan women who were close to the end of their reproductive years (40-49 years) was drawn from the 2011 Uganda Demographic and Health Survey. A Poisson regression analysis was modelled to explore the association between partner age difference and fertility while also exploring its levels and patterns across selected socio-economic characteristics using percentage distributions.

Results: Indications from the study are that Uganda is indeed a high fertility country with an average fertility of eight (8) live births per woman with early childbearing in teenage (19) years. Results from the multivariate regression analysis also showed that women with younger partner have lower fertility (-0.009 SE: 0.0679) while those with older partners by 1-5 years had higher fertility (0.051 SE: 0.0480) when compared to women with no partner age difference although no statistically significant association was found.

Conclusion: Partner age difference is not significantly associated with fertility and may also not be an important predictor of Uganda's high fertility. It is therefore important that the government of Uganda address other critical issues that may be influencing high fertility rates as identified in this study especially factors such as higher child mortality, early marriages as well as values influencing increasing number of births in the rural place of residence.

KEYWORDS: Partner age difference, fertility, Uganda

1.1. BACKGROUND

Persistent high fertility levels of less developed countries like Uganda are of concern and necessity in demographic research. It has also been observed in research as an impediment to the achievements of national policies as well as individual goals (Rabiu and Ahmad, 2014). Uganda currently ranks among high fertility countries in the world with a total fertility rate (TFR) of 6.2 and consequently ranks among those with the highest population in the East and Southern Africa regions combined (UBOS, 2014; PRB, 2013). Its population growth rate of about 3.2% also ranks sixth among countries with the highest population growth rate in the World (Republic of Uganda, 2014). Its population is expected to increase to about 46.7 million by the year 2025, an increase of 11.8 million persons in 11 years (UBOS, 2014). One notable contributing factor to these high fertility rates has been the increasing number of persons who are exposed to sexual activity (Bbaale and Mpuga, 2001). About one-in-four girls aged 15-19 years in Uganda is pregnant or already a mother (UBOS and Macro International Inc., 2011). Policies and laws on teenage marriage are not adequately enforced in this part of Africa as about 49% of Ugandan girls are married off before they age 18 years despite that the country's laws does not allow for this (UNFPA 2013).

High fertility has however been known to exert pressure on public resources, families and individuals as well as pose a number of health risks that affect maternal and child health, pose environmental threats and hinder opportunities for economic development (World Bank, 2010). Uganda's high fertility has also resulted in a very young population with the population of Ugandans below 15 years estimated at 52%. This is further reflected in its high dependency ratio of 103 dependents for every 100 working persons, the 2nd highest in the world after Niger (World Bank, 2013). Unemployment for Ugandan youths also stands at more than 65% with a very high rate of underemployment. Consequently, the effect of these increase in population growth rate is reflected in the country's health status as Uganda currently experiences one of the poorest health indicators in the world. The increasing demand for health care services for infants and the inability of the country to meet up with this demand has resulted in an infant mortality rate of 54 for every 1,000 live births (Republic of Uganda, 2014).

Achieving fertility reduction is said to be dependent upon the action of individuals or couples to reduce the number of children ever born (Bongaarts, 2003). However, efforts in controlling

fertility in Uganda through program and commercial campaign strategies are yet to yield plausible results (Katende, Gupta, and Bessinger, 2003). High human fertility is known to be resulting from a number of factors and several studies have tried to examine the socio-economic factors associated with high fertility rates in Uganda while other studies on partner age difference as well have also focused on its effect on spousal violence and HIV/AIDS transmission neglecting its contribution to fertility (Vavrus and Ulla, 2003; Bbaale and Mpuga, 2001; Buyinza and Hisali, 2014). A proper understanding of the relationship between partner age difference and fertility in Uganda would be of necessity in tackling socio-demographic problems associated with uncontrolled fertility in the country. This is because in most African settings especially among couples, men are likely to be significantly older than their wives and it is rare to identify a family where reverse is the case (Adebowale and Palamuleni, 2014). An understanding of this relationship will also help in achieving the country's action plan of 2011 which is aimed at addressing the issues of appropriate planning for a rapidly growing population. It also contributes to the body of knowledge on fertility determinants and the mechanisms underlying fertility decision among couples in Uganda through publications in scholarly journals and conferences.

1.2. THEORETICAL FRAMEWORK

The basic framework used in this study is by John Bongaarts (2008) which tries to explain that fertility is affected by direct or intermediate variable (proximate determinants) and also by indirect determinants which operates through the proximate determinants. The indirect variable emphasized in this framework are socioeconomic variables which includes: education, wealth index, employment status; and demographic characteristics such as: place of residence, partner age difference and age at first birth. These indirect variables then operate through contraceptive use as proximate/direct determinants.

The main predictor variable in this study (partner age difference) is therefore an indirect variable operating through the proximate determinants of fertility to influence fertility levels. The other predictor variables used in this study are level of educational attainment, wealth status, employment status, age at first birth, place of residence and child mortality. All which are known to either lower or increase fertility levels in a society through contraceptive use and desired family size.

1.3. PARTNER AGE DIFFERENCE AND FERTILITY

Partner age difference has been shown in previous studies as one of the key factors influencing household decisions including fertility and contraceptive use (Laguna et al., 2000). Partner endorsement of family planning is also decisive in the patterns of age difference between partners (Manlove, Ryan and Franzetta, 2003). A number of studies have also reported that the use of contraception by women is associated with the level of communication with their partners and this may in turn explain why age difference between partners appears also to influence whether an intercourse is protected against sexually transmitted infections (STI) as well as unplanned conception (Manlove, Ryan and Franzetta, 2004; Kaestle, Morisky and Wiley, 2002; Stone and Ingham, 2002; Crosby, et al., 2002). Manlove also found that adolescents with older sexual partners were significantly less likely to consistently use a method of contraception which is why these young women are substantially at risk of HIV infections and high fertility compared to women with no partner age difference (Manlove, et al. 2003).

A study of the relationship between age differences and protected first heterosexual intercourse in Ghana using the fifth round of the Ghana Demographic and Health survey (GDHS, 2008) found a significant relationship between condom use and age difference between sexual partners while also explaining that higher partner age difference of ten or more years tends to reduce the chances of using a condom (Amo-Adjei, 2012). Analysis from his findings showed that women who are between 5-9 years younger than their partner were about three-times more likely to use a method of contraception compared to women with 10 or more years partner age difference (Amo-Adjei, 2012). His findings were consistent with other earlier studies which also revealed that for women who were 10 or more years younger than their partners, chances of condom use were approximately 13% compared to roughly 30% and 28% for women who were 1-4 years and 5-9 years younger than their partners respectively (Gregson, et al., 2002). Modern contraceptives use and sex refusal were also found to fall consistently with increasing age gap between spouses which was identified to be an important factor in fertility control (Mohammad, 2013; Stephen and Enoch, 2014).

Gebreselassie and Mishra (2007) also found that partner age difference influences spousal discussion and approval of family planning in sub-Saharan Africa in general. Younger couples, under 35 years of age in their study were found to be more likely to discuss, agree and use family planning than couples aged 35 years or older. A similar pattern of fertility of which was

found among women in Orissa, an eastern Indian state where lower partner age difference showed significant decline in fertility (Nanda, 2005).

1.4. DATA AND METHODS

This cross-sectional study uses secondary data from the 2011 Uganda Demographic and Health Survey (UDHS) which was downloaded with permission from the MeasureDHS website (www.measuredhs.com). It is a nationally representative survey covering the country's entire population residing in non-institutional dwelling units. Sampling frame for the survey was drawn from clusters in the country's 2009/10 National Household Survey (2010 UNHS) which were selected from the 2002 Population Census sample frame. Using a two-stage sampling technique, 404 enumeration areas were selected from among clusters sampled in the 2011 UNHS in the first stage while the second stage involved selecting households in each cluster using a purposive sampling technique from a complete listing of households which was updated prior to the survey.

All the 10,086 households in the 2010 UNHS which were in the 404 enumeration areas were thereafter included in the survey and all the 9274 eligible women who were in their reproductive age-15-49 years who were either visitors or permanent residents of the households were identified as being eligible to be interviewed. The interview consisted of questions on women's fertility experience, their demographic and socio-economic characteristics as well as those of their partners. The overall response rate is 93.8%.

Study Population and Sample Size

The population for this study were married or cohabiting women who were close to the end of their reproductive years (40-49 years) and the study involved a weighted distribution of 917 Uganda women who are either married or cohabiting and are in the 40-49 years age group. The choice of this age group was based on the assumption that women in this age group would have ended or be close to the end of their reproductive ability and as such, we perceive that all things being equal, their current fertility will be all they would ever have.

Variable Description

The outcome variable for this research is fertility which was measured using the total number of children a woman has ever given birth to. Conversely, the main independent variable for this study is partner age difference which was derived by subtracting the woman's current age from

the partner/husband's age to measure the age difference. The difference was thereafter categorized into 5-categories consisting of 'younger partner', 'no age difference', 'older partner by 1-5 years', 'older partner by 6-10 years' and 'older partner by 11 or more years'. Similarly, the selection of variables that were controlled for in this research were guided by reviewing of relevant literature and these variables include: level of educational attainment, employment status, age at first birth, place of residence and child mortality experience.

Data Analysis Plan

Frequency and percentage distribution of respondents were drawn to examine the levels of fertility in Uganda. An analytical bivariate test was also done using cross tabulations and bivariate Poisson model to explore the patterns of fertility across selected socio-economic characteristics as well as their independent association. To further examine the association between partner age difference and fertility while controlling for the confounding effects of other variables, a multi-variate Poisson regression model of analysis was modelled. This is because the outcome variable (number of children born to women) is a discrete variable with only positive-negative integer values such as 0, 1, 2, 3... and more.

The applicability of the model was checked by testing for over-dispersion of the outcome variable as well as the goodness of fit test after introducing covariates into the model. Weighting of responses using 'iweights' was also done to correct for sampling error and to ensure that the sample is a true representation of the entire population. Interpretation of results were done using coefficients with level of significance set at $p < 0.05$ and confidence intervals of 95%. Coeff=0; Coeff >0; and Coeff <0 means that there's no difference in the expected number of births, higher expected number of births and lower expected number of births across the various socio-demographic characteristics respectively The data was subsequently managed, transformed and analyzed using the Stata 12 software.

1.5. RESULTS

The mean age at first birth in Uganda based on the findings of this study was 19 years and an average fertility of 8-live births per woman. From a weighted sample distribution of 917 women, **Table 2** shows that majority (about 86%) of the women are younger than their partner while about 9% are older than their partner. Use of contraception is very low in the country with a higher percentage of the women (69%) reported not to be using any method of contraception

while about 24% reported to be using a modern method. More than two-third (70%) of the women also reported to be married while the rest are in cohabiting unions.

The bivariate relationship between socio-demographic variables as shown in **Table 3** shows that the average fertility to women with no age difference (8) was found to be similar to those with older partners while the average number of births to women with younger partner was a bit lower (7) compared to women in other categories (**Table 3**). This could however be an indicator of the influence that partner age difference has on fertility outcomes though no statistically significant association was found between the variables. Consequently, the study found that marital status has a statistically significant association with fertility with higher (8) average number of births to married women compared to 7 among cohabiting women. Other important predictors that were found to be significantly associated with fertility are place of residence, educational attainment, child mortality experience as well as age at first birth.

Findings from the multivariate Poisson regression model in the **Table 4** showed that controlling for the confounding effects of other important predictors in the model such as educational attainment, marital status, wealth status, place of residence and age at first birth, women with younger partner have lower fertility (-0.02 SE: 0.0690) when compared to women with no partner age difference. Consequently, there tends to be higher fertility among women with an older partner compared to women with no partner age difference except among those with an older partner by 6-10years (-0.012 SE: 0.0504). However, other predictors that were observed to have significant influence on fertility outcomes are marital status, age at first birth, place of residence and educational attainment.

1.6. DISCUSSION OF FINDINGS

Exploring fertility levels in Uganda, this study provides empirical evidences on the association between partner age difference and fertility. With an average fertility of 8 live births per woman and an average age at first birth of 19 years, indications from this study are that Uganda is indeed a high fertility country with early onset of childbearing in the teenage years. This study controlling for a number of socio-demographic variables such as education, marital status, age at first birth and place of residence hypothesized that women with older partners are more likely to have higher fertility than those with no age difference and women with younger partner being likely to have lower fertility compared to those with no age difference. This is based on the assumption that women who are older than their partner are more likely to

contribute much better in household decision making especially those that have to do with contraceptive use than women who are younger than their partner (Nanda, 2005; Amo-Adjei, 2012).

Emerging finding from this study showed that women with younger partners have lower fertility outcomes compared to women with no age difference and almost all those with an older partner except those whose partner is older by (1-5years) have higher fertility outcomes when compared to women with no age difference. However, no statistically significant association was found between these variables. This finding is consistent with other previous studies where fertility was found to be higher and contraceptive use lower as age gap widens (Amo-Adjei, 2012). Similarly, because of strong male dominance in many African countries and Uganda inclusive, higher fertility as age gap widens may be because of non-endorsement of family planning by the older partner although this study was unable to ascertain that (Manlove, Ryan and Franzetta, 2003). These findings therefore suggest that partner age difference may not be an important predictor of high levels of fertility in Uganda.

Other important predictors that were however controlled for in the model such as education, place of residence, child mortality experience among others were found to show statistically significant association. Relative to educational attainment, the study found that women with secondary and those with higher education had lower fertility when compared to those with no formal education while those with primary education had no significant difference in fertility from those with no education. This association could have been due to the educated women being empowered and exposed to information that makes them more likely to be employed outside their home environment thereby giving them more awareness regarding their own health and that of their children (Olatoregun et al., 2008; Adhikari, 2010). Education is also perceived to enable women choose smaller family size, postpone marriage and also use contraception (Adhikari, 2010). Place of residence was also found to be an important predictor of fertility in Uganda with higher fertility in the rural Uganda compared to the urban areas. This is because fertility is perceived to be linked with economic and social characteristics of life settings (Cernic & Kveder, 2008) and is connected with structural and cultural characteristics of the social environment (Ushie et.al, 2011; Rabiou and Ahmad, 2014). For instance, women in the urban areas tend to have more education and are more likely to participate in the formal labour market coupled with a higher tendency to appreciate a smaller family, have better knowledge and access to modern contraception than women in the rural areas (Oyefara, 2012;

Boyle, 2003). Similarly, this study found child mortality to have significant association with fertility outcomes and this is consistent with the findings of Ushie et.al (2011) in that child mortality plays a vital role in expecting and in obtaining offspring whereby women with child mortality experience tend to desire more children in other to compensate for the dead ones. In the same manner, a woman's age at first birth was also found in this study to influence fertility outcomes this is because early fertility experience as observed in this study with an average of 19 years increases a woman's risk of having a high fertility compared to a late age at first birth (Oyefara, 2012).

1.7. LIMITATIONS OF THE STUDY

This study is limited in its inability to predict the causal relationship between partner age difference and fertility levels owing primarily to the use of a cross-sectional data. Similarly, the study was unable to determine the timing of occurrence of each of the variables under study such as the time at which the woman attained an educational level or moved to a particular residence type or if the children were given birth to in the current union. Similarly, the study was unable to ascertain information on contraceptive use history of sampled women in the study as this information was unavailable in the dataset. However, conscious efforts were made to ensure that the best possible results were obtained from this research.

1.8. Conclusion and Recommendations

Conclusively, findings from this study has ascertained partner age difference has no influence on fertility outcomes However, the direction of flow was consistent with earlier studies with a decline in fertility outcomes as partner age difference reduces.

Based on these findings therefore, it is important that the government of Uganda so as to be able to achieve its population policy of 2008 and action plan of 2011 address other critical issues influencing high fertility rates especially those factors identified in this study such as higher child mortality, teenage childbearing as well as values influencing increasing number of births in the rural place of residence. Improvement in health care services that addresses and reduces the number of children mortality especially neonatal as well as under-five should also be paramount in the heart of the government in order to ensure a decline in fertility while also increasing the quality life for Ugandans. There is also a need to conduct further studies using cohort or panel study to study women over time and examine this association.

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APPENDIX

Table 1: Variable Description

Background Variables	Measurement	Background Variables	Measurement
Dependent Variable			
Fertility (Number of Children Ever Born)	Count Variable		
Independent Variables		Child Mortality Experience	
Partner Age Difference		No Mortality	Categorical
Younger Partner	Categorical (Ordinal)	Some Mortality	(Ordinal)
No Age Difference			
Older Partner by (1-5 years)			
Older Partner by (6 - 10 years)			
Older Partner by (more than 10 years)			
		Educational Attainment	
Age at First Birth		No Education	
	Continuous	Primary Education	Categorical
		Secondary Education	(Nominal)
		Tertiary Education	
Place of Residence		Marital Status	
Rural	Categorical	Cohabiting	Categorical
Urban	(Nominal)	Married	(Nominal)

Table 2: Demographic Characteristics of Respondents

Background Variables	n = 917	Percentage (%)	Background Variables	n = 917	Percentage (%)		
Partner Age Difference			Educational Attainment				
Younger Partner	82	9.0	No Education	281	30.6		
No Age Difference	47	5.2	Primary	520	56.8		
Older Partner by 1-5 Years	348	38.0	Secondary	85	9.3		
Older Partner by 6-10 Years	249	27.2	Higher	31	3.3		
Older Partner >10 Years	190	20.7					
Marital Status			Child Mortality Experience				
Married	642	70.0	No	318	34.7		
Cohabiting	275	30.0	Yes	599	65.3		
Place of Residence				Min	Max	Mean	S.D
Urban	106	11.6	Fertility (Number of CEB)	2	15	8	2.8
Rural	811	88.4	Age at First Birth	8	37	19	3.9

Table 3: Bivariate relationship between socio-demographic variables and fertility outcomes

Background Variables	Average Fertility	S.Deviation	Background Variables	Average Fertility	S. Deviation
Partner Age Difference		‡‡‡	Child Mortality		***
Younger Partner	7	2.8	No	6	2.9
No Age Difference	8	2.6	Yes	8	2.5
Older Partner by 1-5 Years	8	3.0	Education		***
Older Partner by 6-10 Years	8	2.8	No Education	8	2.9
Older Partner >10 Years	8	2.7	Primary	8	2.8
Place of Residence		***	Secondary	6	2.2
Urban	6	2.5	Higher	5	2.8
Rural	8	2.8	Marital Status		***
Age at First Birth		***	Married	8	2.7
Mean: 19 Years	8	2.6	Cohabiting	7	3.1

‡‡‡ - Not Significant at p<0.05; *** - Significant at p<0.05

Table 4: Multivariate Poisson regression model examining the association between partner age differences while controlling for other variables

Background Variables	Coeff (Robust Std. Err.)	Background Variables	Coeff (Robust Std. Err.)
Partner Age Difference		Child Mortality	
Younger Partner	-0.009 (0.0679) ‡‡	No	Ref
No Age Difference	Ref	Yes	0.187 (0.0294) **
Older Partner by 1-5 Years	0.051 (0.0480) ‡‡	Place of Residence	
Older Partner by 6-10 Years	-0.004 (0.0504) ‡‡	Urban	Ref
Older Partner >10 Years	0.045 (0.0521) ‡‡	Rural	0.172 (0.0378) **
Educational Attainment		Age at First Birth	0.020 (0.0035) **
No Formal Education	Ref	Marital Status	
Primary	0.007 (0.0276) ‡‡	Married	Ref
Secondary	-0.144 (0.0454) **	Cohabiting	-0.070 (0.0292) **
Higher	-0.233 (0.0722) **		

‡‡ - Not Significant at p<0.05; ** - Significant at p<0.05; Ref- Reference Category