Explaining Factors Associated with Age at First Marriage in Zambia: Evidence From 2018 DHS Data.

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A B S T R A C T

Introduction: Generally, fertility rates in the world have declined in recent years. Zambia's total fertility rate by 2018 is recorded at about 5 children per woman. This rate contrasts sharply with the average total fertility rates for most developed countries which is estimated to be about 2 children per woman. One of the significant factors contributing to continued high fertility rates in developing countries is early age at first marriage among women. This study was conducted to determine the factors associated with age at first marriage in Zambian. Understanding variations in age at first marriage helps in explaining differences in fertility across populations and fertility within individual populations over time.

Methods: The study employed a descriptive and analytical study design using data collected in the 2018 Zambia Demographic and Health Survey (DHS). The DHS collected on demographic indicators from 13,683 women of reproductive age 15-49 country wide. Bivariate and multivariate analyses were performed to understand the factors associated with age at first marriage in Zambia. Logistics regression analysis was also performed to determine the relative importance of the factors that associate to age at first marriage in Zambia, as well as to establish which of the variables have independent effects on the outcome of interest.

Results: The results of this study reveal that the mean age at first marriage for women in Zambia has slightly increased from 18.2 years in 2013-14 DHS to 18.7 years in DHS 2018. While the country's legal age at married is set at 21 years, it is interesting to note that almost three-quarters of women in Zambia were married before age 21. The findings show that education, residence, region, wealth index and employment status among women were significantly associated with age at first marriage. Women who attained tertiary or higher level of education were 9 times less likely to marry before age 21 compared to those with no formal education. Findings also reveal that women who got married before age 21 had a higher mean number of children ever born compared to women who got married after age 21.

Conclusion: Education has far reaching benefits of increased age at first marriage which in turn can contribute to fertility reduction. Therefore, it is important that government policies promote social status of women in Zambia by helping them to have more access to education so that they can make informed decisions regarding when to get married. It is crucial to continue improving girls and young women access to education, as this is important for rising the women's age at first marriage, empowering them and enhancing their participation in labour market. Promoting policies and programs to raise age at first marriage in Zambia will directly contribute to fertility reduction.

Keywords: *Age at first marriage: Fertility; DHS Data; Women; Zambia*

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1. Introduction

The National Research Council and Institute of Medicine of the National Academies in 2005 stated that the right to exercise the choice of marriage was established in international human rights instruments. According to human rights advocates, marriage before 18 years contravenes the United Nations Convention on the rights of the child, which defines age 18 as the end of childhood. Therefore, marriage before 18 years can be considered as child marriage [30]. Moreover, early marriage is said to undermine other rights guaranteed by the convention, including the right to be protected from physical abuse and sexual exploitation and the right not to be separated from parents against one's will [30]. Yet many girls, and a smaller number of boys, enter marriage without any chance of exercising their right to choose. Some are forced into marriage at a very early age; others are simply too young to make an informed decision about their marriage partner or about the implications of marriage itself.

However, from a demographic and health perspective, early age at first marriage is seen primarily as a contributing factor to early child-bearing. One of the major repercussions of early motherhood is significant health risks. In one of their articles Singh et al. in 1996 stated that, "early pregnancy poses great health risks for a young woman and, if she carries the pregnancy to term, for her infant; these risks are exacerbated by poverty and inadequate access to maternal and child health services". The chance of risking infant's health and jeopardizing the future of these children increases when they are born in large families, where a single woman has the responsibility of several children. The consequence of early marriage, up to a certain extent, contributes to high infant and maternal mortality rates. Sometimes even in this context, the role of adolescent pregnancies is overlooked because the phrase, teenage pregnancy, is typically understood to mean pregnancy outside marriage. Yet, far more adolescent pregnancies occur within marriage than outside because some get married before the age of 18.

Despite the efforts of reformers in the early part of the 20th century, early age at first marriage has received slight attention from the modern women's rights movements [33]. There has been virtually no attempt to examine the practice of early age at first marriage as a human rights violation in itself [33, 34]. Reproductive rights advocates believe that laws specifying a minimum age at marriage are rarely enforced; rather, customary practice takes precedence over civil law [4]. For example, under the statutory law of Zambia, the Marriage Act specifies that if either party to a marriage is 21 years and above, or is a widow or widower, there is no need for parental consent other than the full consent of both parties. Where a party to a marriage is under the age of 21 years, consent of the parents or guardian is required. As relates to parties below the age of 16, Section 33(1), states that a marriage between persons either of whom is under the age of 16 years requires the consent of the Judge of the High Court." Under the Zambian customary law, marriage of a child is practiced as long as the children have reached puberty. Children and teenagers married at ages below the legal minimum become statistically invisible as children. Thus, in the eyes of the law, an adult male who has sex with a girl of below 16 outside marriage may be regarded as a criminal, while the same act within marriage is condoned.

Societies with later age at first marriage have experienced decreased fertility rates while in traditional populations in Asia and Africa where age at first marriage is younger, high levels of fertility have been observed [25]. Delayed age at marriage directly affects completed fertility by reducing the number of years available for childbearing. The reason for decreased fertility rates is that delayed age at marriage permits women to complete their education, build labour force skills, and develop career interests that compete with childbearing within marriage. These career interests, in turn, motivate women to limit family size or widen the spacing of their children. In other words, educational attainment, women's participation in the labour force and women's economic independence are factors associated with older age at marriage [3].

While the age of marriage is generally on the rise around the world, early marriage, marriage of children, and adolescents below the age of 18 years is still widely practiced in developing countries [33]. In Zambia, for example, where early marriages are prevalent, the total fertility rates stand at 4.7 which might not be the case if marriages were delayed [36]. This rate contrasts sharply with the average for most developed countries and far exceeds the level of 2.2 children required to replace the population [32]. It is argued that reducing total fertility rates in a country is an essential component of attaining demographic transition in a country and improving the standard of living of its people.

2. Study Objective

This study focused on investigate the factors associated with and effects of age at first marriage using evidence from the 2018 Zambia Demographic and Health Survey data.

3. Methods and Materials

The study employed both descriptive and analytical approaches in the analysis of data. The study used secondary data from the 2018 Zambia Demographic and Health Survey (DHS) which was implemented by the Zambia Statistics Agency (ZamStats) in collaboration with the Ministry of Health (MoH). The 2018 Zambia Demographic and Health Survey (2018 ZDHS) was a nationwide survey with a nationally representative sample of approximately 13,625 selected households. All women age 15-49 who were usual members of the selected households or who spent the night before the survey in the selected households were included in the sample. The 2018 ZDHS followed a stratified two-stage sample design. The stratified sampling design was achieved by selecting sample points (clusters) consisting of enumeration areas (each EA consisted of an average 110 households) and by systematic sampling of households. Information on women's demographic profile including marital history, birth history, contraception use, maternal health and fertility were capture from all interviewed women.

Analysis in this study focused on factors associated with age at first marriage and what effect it has on fertility of women in Zambia. Bivariate analyses and Multivariate analysis using logistic regression model were also performed on the data. All analyses done were adjusted for the multi-stage sampling design and were weighted.

4. Results

4.1 Demographic Characteristics of women

Table 1 describes the main background characteristics of women captured in the 2018 Zambia Demographic and Heath Survey. The study sample included all women who were interviewed during the survey. Descriptive statistics show that slightly more than one-third of the women were in peak ages of child beating (20-29) and 22 percent of the sample constituted teenagers aged 15-19. The majority of women in sample (55 percent) were reported to be married while 31 percent reported to have never been married. Over half of the women were living in rural areas at the time of the survey. In terms of education, at least 4 out of 10 women attained only primary level of education and about 6 percent attained tertiary level of education.

About three out of every ten women were classified to belong to households considered as poor while 22 percent belonged to rich households.

Table 1.0 Percent distribution of respondents' background characteristics- ZDHS 2018

Characteristics	Frequency	Percent
Age		
15-19	3,000	21.9
20-24	2,733	20.0
25-29	2,237	16.4
30-34	1,862	13.6
35-39	1,697	12.4
40-44	1,253	9.2
45-49	900	6.6
Marital Status		
Never in union	4,272	31.2
Married	7,580	55.4
Living with partner	68	0.5
Widowed	392	2.9
Divorced	965	7.1
No longer living together/separated	405	3.0
Residence		
Urban	6,374	46.6
Rural	7,309	53.4
Education		
No Education	1,054	7.7
Primary	6,059	44.3
Secondary	5,816	42.5
Higher	755	5.5
Wealth Index		
Poorest	2,442	17.8
Poorer	2,387	17.4
Middle	2,477	18.1
Richer	3,011	22.0
Total	**13,683**	**100**

4.2 Age at First Marriage

Early age at marriage is associated with early childbearing. Among the reasons used to explain why low age at marriage leads to early childbearing in most parts of Africa include low education levels, low participation in formal labour force among females, the perceived economic rationale of large family size since many children provide some economic gain to parents such as insurance in old age and in times of need, the low socio-economic status of women, and low uptake of effective modern family planning contraception [26, 35]. The 2018 DHS shows that child marriages still exist in Zambia. In 2018 almost least 4 out 10 ten women in Zambia got marriage below age 17. Only 7% of women indicated to have got married at 25 years or older.
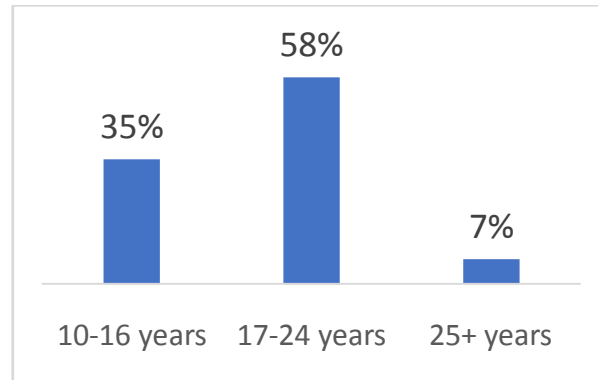
Figure 1: Percent distribution women by of age at first marriage/cohabitation

Results presented in table 2.0 show that overall, 7 in every 10 women of reproductive age in Zambia were married before age 21. Women living in rural areas more likely to be married early compared to their counterparts in urban areas. This finding is similar when comparing age at marriage between regions of the country, the urban regions recoded slightly higher proportions of women who got married after age 21. Also, women with only primary or no formal education had a higher chance of being married at younger ages.

Table 2.0: Percent distribution of age at marriage by background characteristics

Characteristics	Mean age at first marriage	Proportion of women married below age 21	Proportion of women married at age 21+
Residence			
Urban	19.6	66.7	33.3
Rural	18.1	81.7	18.3
Region			
Central	18.4	78.1	21.9
Copperbelt	19.5	66.6	33.4
Eastern	17.8	85.9	14.1
Luapula	18.1	80.2	19.8
Lusaka	19.3	67.1	32.9
Muchinga	18.0	82.6	17.4
Northern	17.7	84.3	15.7
North-Western	19.3	72.2	27.8
Southern	18.6	79.4	20.6
Western	20.1	62.4	37.6
Education			
No Education	17.9	81.8	18.2
Primary	17.8	84.0	16.0
Secondary	19.5	67.7	32.3
Higher	23.5	27.6	72.4
Wealth Index			
Poorest	18.0	82.8	17.2
Poorer	18.0	82.3	17.7
Middle	18.1	82.3	17.7
Richer	18.9	75.5	24.6
Richest	20.9	54.1	45.9
Total	**18.9**	**74.2**	**25.8**

4.3 Age at first marriage and children ever born

The number of children ever born to a particular woman is a measure of her lifetime fertility experience up to the moment at which the data are collected. Generally, in Zambia women who marry early are expected to have a higher mean number of children ever born by the time they complete their child bearing period [26, 12]. Analysis of age at first marriage and children ever born in Zambia show that there is a positive correlation. Thirty percent of women who got married before age 21 reported to have at least 6 or more children compared to only 12 percent of those who indicated to have first gotten married after age 21.

Table 3.0: Percent distribution of age at first marriage and children ever born

Characteristic	Women married below age 21	Women married at age 21+	Total
Children Ever Born			
Zero	2.9	7.0	3.8
One -Three	41.8	58.6	45.2
Four – Five	24.9	22.0	24.4
Six and above	30.3	12.3	26.6
Total	**100**	**100**	**100**

4.4 Logistics regression analysis of age at first marriage

Table 4.0 Multiple Logistic Regression Analysis of the factors associated with age at first marriage in Zambia, ZDHS 2013-14

Age at first marriage	Linearized Odds Ratio	Std. Err.	T	P>t	[95% Conf.	Interval]
Region						
Copperbelt	1.21013	0.13938	1.66	0.098	0.96509	1.51740
Eastern	0.73101	0.10435	-2.19	**0.029***	0.55225	0.96763
Luapula	0.98085	0.12894	-0.15	0.883	0.75761	1.26987
Lusaka	1.13875	0.12946	1.14	0.254	0.91082	1.42371
Muchinga	0.89913	0.10975	-0.87	0.384	0.70742	1.14278
Northern	0.80342	0.11249	-1.56	0.119	0.61022	1.05778
North-Western	1.38271	0.19592	2.29	**0.023***	1.04674	1.82650
Southern	0.95766	0.14290	-0.29	0.772	0.71433	1.28387
Western	2.38019	0.34154	6.04	**0.000***	1.79551	3.15525
Residence						
Rural	0.86764	0.08181	-1.51	0.033	0.72093	1.04420
Religion						
Protestant	0.91554	0.07928	-1.02	0.309	0.77232	1.08533
Muslim	0.74307	0.31043	-0.71	0.477	0.32705	1.68830
Others	1.14213	0.32568	0.47	0.641	0.65228	1.99984
Education						
Primary	0.99159	0.10046	-0.08	0.934	0.81263	1.20996
Secondary	2.37100	0.26653	7.68	**0.000***	1.90118	2.95692
Higher	9.17314	1.62142	12.54	**0.000***	6.48207	12.98140
Employment Status						
Working	1.17032	0.07704	2.39	**0.017***	1.02836	1.33189
Wealth index						
Poorer	0.94206	0.09829	-0.57	0.568	0.76747	1.15636
Middle	0.77436	0.07549	-2.62	**0.009***	0.63940	0.93782
Richer	0.82129	0.11377	-1.42	0.156	0.62563	1.07816
Richest	1.15669	0.17388	0.97	0.333	0.86092	1.55407

The overall multivariate logistic equation model compares the relative effect of the socio-economic and demographic factors on age at first marriage. The results indicate that education, wealth index, place of residence, region were the most significant factors associated with age at first marriage. The results in study are consistent with many previous studies conducted on factors associated with age first marriage in different countries within African and other parts of the world.

Results of logistic regression analysis presented in Table 4.0 show that women living in Western province were twice highly likely to marry after age 21 compared to their counter parts in Central province [OR: 2.38, C.I: 1.80-3.16]. A similar observation is seen in results for Copperbelt, Lusaka and North-western provinces which indicate that women have a high likely hood of marrying after age 21. For Copperbelt province, women were 21% more like to get married after age 21 and in Lusaka province, women were 13% more likely to get married after age 21 compared to women living in Central province. Regarding religion, women who indicated to belong to Protestant and Muslim denominations were more likely to get married before age 21 compared to women who belonged to catholic denomination although these differences are not significantly different.

The results show that the odds of marrying after age 21 increases with an increase in level of education. For instance, women with higher level of education were 9 times more likely to marry after age 21. This is a strong indication that spending more time in school increases the probability of women to delay marriage and child bearing hence increased participation in other opportunities such as labour force. As expected, women who reported to be in employment were 1.2 times more likely to marry after age 21 compared to the unemployed women. Results also show that women classified to belong to the richest households were less likely to marry at early.

5. Discussion

The descriptive analysis of this study reveals that most socio-economic and demographic factors are associated with age at first marriage among Zambia women of reproductive age. The study results show that most of the independent variables studied were significant associated with age at first marriage. The study show that child marriages are still prevalent in Zambia even though the prevalence has declined by 25 percentage point from 41.6% to 31.4%. With this prevalence Zambia still ranks as one of the first 20 countries with high prevalence of child marriages [36].

This study reveals women living in rural areas have a lower mean age at first marriage compared to those living in urban areas. These results indicate that place of residence does influences age at first marriage among women. One hypotheses of this study was that women in urban areas are more likely to have a higher age at first marriage than those in rural areas. Results from the bivariate analysis which show that there is a significant relationship between age at first marriage and place of residence (p<0.05). This finding is similar to what other studies reported that there is a significant difference in age at first marriage between women living in rural areas and those in living in urban areas [14,26].

Education is one of the most important determinant factors associated with age at first marriage in Zambia. This study further reveals that women with secondary and higher education delayed marriage on average by two and six years respectively.

This study shows that education is by far the most significant variable in the analysis of factors associated with age at first marriage. The chance of early marriage reduced as the level of education increased; this is evident from the statistically significance level of the education variable (p<.05). These results provide empirical evidence that educational attainment is an important determinant of women's age at first marriage in Zambia. The quest for formal education has also contributed in rise of average marriage age. This finding is in line with what other scholars found out that spending more years in schooling leads to delayed marriage and therefore higher levels of education are associated with lower probability of early marriage [1, 2]. Thus, this is very much in agreement with the main theories on marriage studies which explains that the higher the education level, the more likely it is for women to delay the age at first marriage.

Formal schooling shapes ideas and values of individual including the power to make informed choices about matters affecting social life. Some argue that effects of formal schooling, particularly at advanced levels is increased exposure to western values and behaviour. Moreover, education indirectly delays marriage by increasing women's ability to regulate their fertility. This indirect effect is likely to be the strongest in contexts where marriage is the socially encouraged response to unplanned pregnancy. Educational attainment works in conjunction with labour force participation to offset the attractiveness of early marriage and to reduce economic motivation for early marriage by raising wage rates and increasing access to better jobs for women.

Given that the rise in the age at first marriage has taken place is some countries on the African continent, more country-specific studies and cross-country comparisons are also warranted. Since age at first marriage differs from place to place, this study basically attempted to establish the factors associated with age at first marriage in the Zambia context. The study also attempted to compare findings from Zambia to studies conducted in other countries with similar context. Furthermore, the study sheds light on the association of place of residence, employment status, and social status with age at first marriage among women in Zambia.

6. Conclusion

Marriage is an event of great social and cultural importance to women in most societies. It is a ceremony that marks the transition to adulthood and often parenthood. Individuals are linked together through marriage and new families are formed. Studies show that at least half of the women in Zambia marry before age 19. There are main reasons for this trend. One of the reasons points low levels of education among Zambian women. This is evident from the 2018 ZDHS which shows that a significant proportion of women have less than secondary level of education.

A woman's age at first marriage continues to be a useful indicator of a woman's status and of the start of childbearing. The formation of the first marriage or union brings important changes in a woman's family situation and in her future expectations and opportunities. Yet, the rising prevalence of sexual

relationships and childbearing outside of marriage means that the complications of age at first marriage or union are changing. Information on changes in the prevalence of early marriage and on their implications for women can help policy makers and service providers recognize that action is needed, and can motivate them to formulate timely and adequate responses. Regulations, policies and programs must be adopted to ensure that young women have as much access as young men to formal education and to employment opportunities.

Authors Information

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Competing Interests
The authors declare that they have no competing interests

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