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Women's Education and Birth Control in Rwanda

Abstract

This study examined the role of women's education in birth control in Rwanda from 1995 to 2000. It was conducted in four provinces, including Kigali City, using a survey questionnaire to collect data using a descriptive methodological approach. The population size is estimated to be 1067 *n*, comprised of women aged 15 to 49. Results indicated that younger women with fertility desire between 2–3 children are 75.07%; the rural area cohabitation rate among college students is 37.82%, while the Western model cohabitation in urban areas and universities is 19.23%; and contraceptive use is 46.3% among young women and 72.34%; among married women. Therefore, there was a significantly higher correlation between women with a high level of education and a lower fertility desire, which resulted in an increase in the age of first marriage.

Keywords: *women's education, Rwanda, birth control, fertility desire, cohabitation, contraceptive method*

Introduction

Education is still considered the best way to grow in the modern world, especially in Sub-Saharan African (SSA) countries. This research examined women's education's impact on birth control from 1995 to 2020. As a norm, African society and schools marginalised female children in some countries. Female children took care of their brothers, cooked, cleaned, and managed all household activities, as demonstrated in the research of women from 32 SSA countries with an average age of 15–19 years (Garenne, 2004). Women's educational marginalisation leads to higher birth rates, poverty, and low quality of life.

Some SSA governments have consciously chosen to go against traditional norms by guaranteeing all children, regardless of gender, the chance to go to school and discover their full potential. The government of Rwanda has made major changes since 1995, one of which is promoting women's education (mainstreaming policy). Women can continue their education from high school to university despite scoring lower on standardised tests than men, and some high-profile positions have been filled by women who scored lower on such tests (Etzkowitz et al., 2000).

This study is divided into three main parts: i) The context is laid out to draw parallels between the experiences of SSA and Asian countries; ii) The research methodology (primary data and survey questionnaires) is explained; iii) The study's findings and outcomes are discussed leading to the conclusion.

Women's Education Experience in SSA and Asian Countries

In the developing world, girls' education has lagged behind boys' because women are more likely to be the victims of discrimination (Aldridge & Christensen, 2013). The gender gap in educational attainment exists because of how girls have historically been treated and undervalued. It is common in cultures that place a higher value on male children, such as India, where sex-selective abortion is widespread; Punjab ranks among the top five states with 880 girls to 1000 boys (Sarkaria, 2009). There are 950 girls for every 1000 boys in India. It is confirmed by a study that shows that it is caused by the choice of abortion against pregnancy in girls (Abrevaya, 2009). Many societies worldwide place cultural significance on having sons rather than daughters. There was a record-breaking disappearance of women in the developing world in the 1990s, with an estimated many thousand reported as missing (Ajayi & Ezegbe, 2020).

Unwanted sex is often cited as the initial catalyst for abortion decisions made by women who discover they are pregnant with a female child. Female children are denied the right to an education by their parents compared to male children in societies that do not allow abortion. Parents in Pakistan value their sons more than their daughters, and this is reflected in the gender gap of 11.3% in primary school enrolment (Mazhar & Saima, 2009).

In some Asian and SSA countries, discrimination against girls in education has been linked to various social issues, including prevalent illiteracy, high school dropout rates, lack of education, and early marriage among girls (Vogl, 2013). Gender inequality is worst for 60% of secondary school students and 50% of young married girls in the 36 SSA countries, and there are 60 million child marriages in South Asian countries (Delprato et al., 2015). Since women are married at a young

age, it leads to a problem of population growth in the SSA region; data for 26 countries in DHS reports clearly shows that the percentage of unions aged 15-19 is 10-19%, and for the age range of 24–24 is 60-69% (Shapiro & Gebreselassie, 2014). Therefore, the average number of children per woman in SSA countries was estimated in 2016 at 4.8 children (Atake & Gnakou Ali, 2019).

Rwanda's Experience from 1995–2020

Rwanda has planned women's education since 1995. After the 1994 Tusti genocide, interfamilial violence and poverty caused women's first marriage to be at a younger age due to their education level. Rural women suffer more than urban women (Jayaraman et al., 2009). Moreover, youth cohorts without education, health, or nutrition increase the population. Rwanda's gender mainstreaming in education, political structures, and quota systems improved women's education and increased their participation in parliaments (Ponge, 2013). Resulting from Rwandan women's education, empowerment, and gender equality, the number of children per woman decreased from 6.17 in 1995 to 3.9 in 2020. (May & Rotenberg, 2021). The participation of women in Parliament also increased to 64.78 %, has the highest female representation worldwide (Tusalem, 2022), in addition to other domains like NGOs or private businesses.

Women Education and Birth Control: Theory and Evidence

It is difficult to disentangle the role of women's education in fertility decline. Research has found that less educated women start having children earlier. In West Africa, educated women are more likely to use contraception than uneducated women (Ware, 1976).

Women with high education use contraception to retain their business status (Kim, 2010). Due to women's education and role in economic modernisation, fertility declined in the 1950s during the demographic transition (Zei & Sforza, 1977). Women's schooling policy and education about contraceptive methods for young females in the school play a major role (McCrary & Royer, 2011). Thus, numerous studies suggest that women's education is an important aspect of birth control, especially in industrialised countries where this strategy began in the 1950s when the population was changing.

Research Methodology

Primary Data Collection

The project was based on primary data. Researchers for the initial reach project typically employ this method, and it is very helpful to the researcher because they have complete discretion on which participants to include (Hox & Boeije, 2005). Our research procedure, which looked into women's education and contraception, is supported by the fact that primary data collection is a part of the fertility study process (Wilcox et al., 2012).

The research was conducted across Rwanda with 1067 randomly selected female participants. They belonged to the city of Kigali and four randomly selected districts in four provinces. A questionnaire survey was used to collect data with the help of enumerators, who meticulously recorded all responses from the respondents on paper.

Random Sampling & Sample Size Calculation

Selecting *n* units randomly from a study population ensures that samples of equal size will be drawn for analysis (Ding et al., 1996). Respondents were chosen randomly to represent women aged 15 to 49.

Sample size Calculation: The independent cohort study was used for the sample size calculation. Participants were chosen based on the frequency of exposure rather than the frequency of any particular outcome. Random selection was made as follows:

- Assign numbers 1-N to items on the list.
- In theory, selecting n labels at random from a population of size N is the same as using a policy of size N. The scope for the study is 95%, which corresponds with 5% = 0.05 as a choice for the probability of detecting a false effect.
- Estimated population prevalence being P0, the estimated sample size n was calculated as follows:

$$n = \frac{\left(z_{\alpha} \sqrt{\left(1 + \frac{1}{m}\right) \bar{p}(1 - \bar{p})} + z_{\beta} \sqrt{\frac{p_0(1 - p_0)}{m} + p_1(1 - p_1)} \right)^2}{(p_0 - p_1)^2}$$

$$\bar{p} = \frac{p_1 + mp_0}{m + 1}$$

$$n_c = \frac{n}{4}\left(1 + \sqrt{1 + \frac{2(m+1)}{nm|p_0 - p_1|}}\right)^2$$

where N is the population size, e is the margin of error (percentage in decimal form), and Z is the Z-score. The Z-score is the number of standard deviations a given proportion is away from the mean. The value for power (95%) corresponds to 5% of the usual choice and P0 (estimated population prevalence).

Simply, $s = Z^2 * P * \frac{(1-P)}{M^2}$

Z – score with a confidence level of 95% used in this study was 1.960. A marginal error allowed in the miscalculation was taken at 5% = 0.05. So, the sample size *n* for an estimated N of 1927944 was 1067.
1927944*(1.96)*0.05*(1.05)/(1927944-1+) + (1.96)*0.05*(1.05)/(0.055 2)) = 1067

Results And Discussion

The sample population was divided into two groups. 427 women without children made up 40%, while 640 women with children represented 60%. This study touches on topics such as young women's fertility desire, the prevalence of cohabitation and the methods of contraception used among women with varying levels of education.

Women's Age and Educational Level

Young women comprise 40% of the sample, with an age range of 15 to 25, plus unmarried women with high age, and married women at 60% with the age of their first marriage. 18.28% of women with children have no education, whereas only 3.74%. Women without children lack education. It suggests generational disparities caused the gap, and free education did not benefit women with children.

Rwanda's free education policy gives young girls a chance to learn. In primary school, 40.94% of married women and 27.65% of young women are enrolled. Thus, the change from the secondary, with a high percentage of women without

Table 1. Women's age and educational level

Age	Women without children		Women with children		Total Count	%
15-19	40.98%	175	1.56%	10	185	17.33%
20-24	43.09%	184	12.96%	83	267	25.02%
25-29	12.88%	55	20.31%	130	185	17.33%
30-34	0.70%	3	23.43%	150	153	14.33%
35-39	0.46%	2	20.46%	131	133	12.46%
40-44	0	0	13.12%	84	84	7.87%
45-49	1.87%	8	8.12%	52	60	5.66%
Total	**100%**	**427**	**100%**	**640**	**1067**	**100%**
Education level						
No education	3.74%	16	18.28%	117	133	12,46
Primary	27.65%	118	40.94%	262	380	35,62
Secondary	62.53%	267	29.53%	189	456	42,74
University level	6.08%	26	11.25%	72	98	9.18
Total	**100%**	**427**	**100%**	**640**	**1067**	**100%**

children (62.53%) and women with children (29.53%), is explained by young girls' educational opportunities today, which can be traced back to the women with children, when school was not for everyone for various reasons such as poverty or culture, which underestimate female gender. The university level is high for women with children, at 11.25%, as most come in the range of 30 years for their first age of marriage, and 6.08% for women without children, due to the problem of gender disparities in universities after high school.

Regional Disparities in Women's Education Level in Rwanda

There is a significant dearth of primary and secondary school classrooms in many SSA countries, and some primary school pupils may have to study outdoors, under trees, which is difficult in both rainy and hot weather. Due to educational inadequacy, rural areas are most affected.

The numbers reveal the same for women without children: 34.43% in rural areas compared to over 39.68% for women with children. The gap between them is due to their different generations. Unlike married women in the past, young girls today can take advantage of the government's better educational facilities and policies.

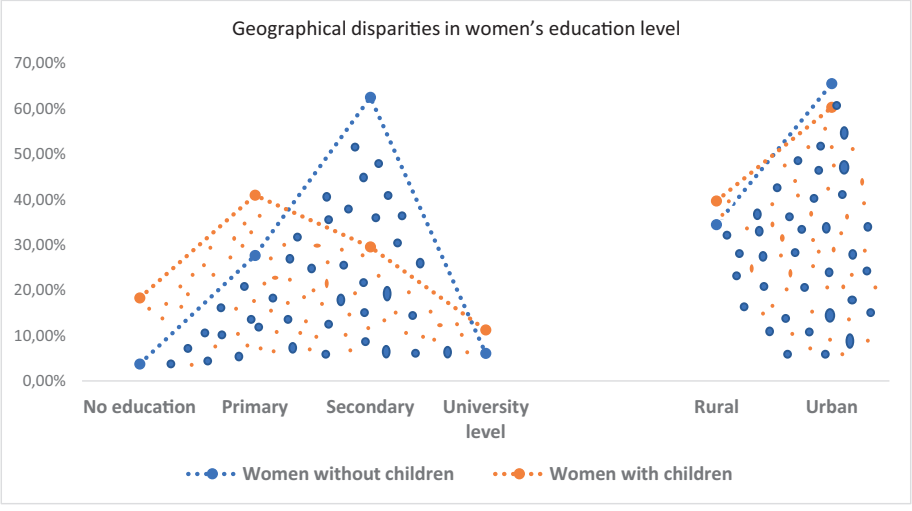

Figure 1. Geographical disparities in women's education level

The current urban environment has many public and private schools, in contrast to the past when women with children did not have as much choice as today. It is well explained by the real geographical disparities, with 65.55 % of women without children and 60.31 % of married women living in urban areas. According to this study and reality, only girls can drop classes, depending on other factors, but this differs from school infrastructure nowadays.

Use of Contraceptive Methods by Women

Since 1981, Rwanda's National Office of Population (ONAPO) has promoted modern contraceptive methods through educational programs that address national demography by improving family planning services (Kamanzi et al., 1990). Since the establishment of reference hospitals, programmes have been decentralised to health centres, and now they are being delivered by social health workers at no cost to stakeholders.

Stakeholders' familiarity with contemporary contraceptives has an impact on their use. Different variables, such as the fact that more educated women are working and hence have less fertility desire, contribute to the rising rates of use of modern contraception.

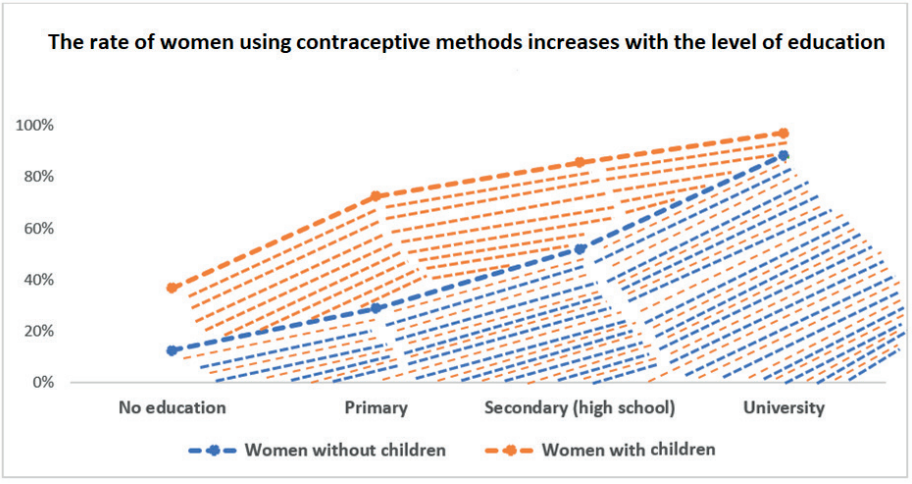

Figure 2. Increased rate of women using contraceptive methods and education level

While for women without children, the use of contraceptives is at 12.5% for no-education women and 88.37% for women with a university level, and for women with children, it is at 36.75% with no education and 97.22% for women with a university level. Women without children make up 46.37% of the contraception use, while women with children make up 72.34 %. Results showed that on a national scale, 47% of young women and 58% of married women reported being sexually active.

Decline in Women's Total Fertility Rate Desire

Some decades ago, in African society, having a large family was a source of power, but that rapidly changed due to the increasingly expensive economic situation. Women's education level plays a significant role in such behavioural changes because as it rises, the fertility desire decreases. Figure 3 clearly illustrates the disparity in fertility desire among generations, with young women expressing a decreased fertility desire and secondary school girls expressing no interest in starting a family for various reasons, including the current state of the economy and the high unemployment rate among youth.

This study's significance stems from the fact that it provides concrete evidence of the country's orientation towards the target of having three children per woman by 2030 (NISR, 2014). This is explained by the women's fertility desire for 2–3

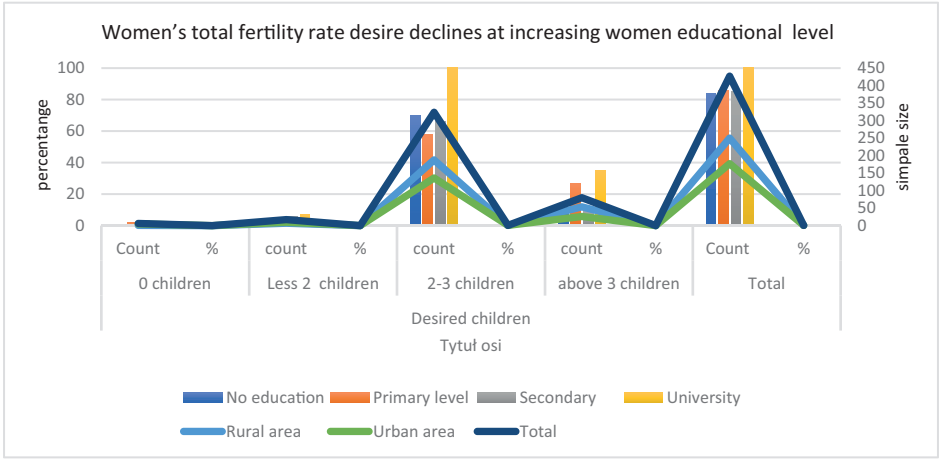

Figure 3. Women's total fertility rate desire declines at increasing women's educational level

children with 83.33% of no education, the women's with primary level fertility desire with 67.45%, the women's with secondary level with 77.65%, and the women's with university level children's desire with 75.59%. Therefore, the total fertility desire for 2–3 children is 75.87% in young women. Despite the low fertility desire of women with no education, the implementation still faces a big challenge due to their ignorance. The percentage of women's fertility desire for 0 children or less than 2 is not significant in this study.

Increase in Women's Cohabitation Practice

The SSA countries do not follow the Western cohabitation model, resulting in different outcomes. Western cohabitations last a long time without fertility desire. Most cohabitations in this part of Africa are rural. Even though they are not married, couples call each other wife and husband. Since then, cohabiting couples have started having children.

As our data showed, 37.82% of secondary-educated women cohabitate. Due to dropping out of primary or secondary school, girls in rural and small towns also have the issue of not pursuing university at the same level as boys after high school (Rubagiza et al., 2022). Some of them would rather live with their boyfriends than parents because they do not have enough money to marry legally. Total of 19.23% of university-educated women practised cohabitation. Our research indicated that the western cohabitation model is more popular in universities and the city of Kigali.

Table 2. Women's cohabitation practice rate increases at increasing women's education level

Educational level	Total women per education level	Women without children	
		Count	%
No education	16	1	6.25%
Primary	118	7	5.93%
Secondary	267	101	37.82%
University	26	5	19.23%
Total	427	114	26.69%

Discussion And Conclusion

This study assessed whether higher levels of female education are a factor in Rwanda's declining birth rate. Educating women is important for the progress of SSA countries, as this leads to better health, hygiene, and lower illiteracy rates among women, all of which contribute to a lower fertility rate (Browne & Barrett, 1991). Moreover, the rise in female education in SSA countries is a factor in the declining birth rate (Shapiro, 2012). In this study, we focused on the correlation between women's education levels (from no education to university level) and factors like modern contraception, fertility desire among young women and cohabitation.

Population growth in SSA countries is often slowed through modern contraception, particularly among married women and young girls in Eastern Africa. As a whole, the prevalence of use among married women in East African countries is 10.8%, except for Rwanda, where the prevalence among young women is 47% to 58% among married women (NISR, DHS, 2019–2020). As a result, this research examines the impact of women's education on the prevalence of modern contraceptive use in Rwanda, finding that women without children with no education have a 12.5% increase up to 88.46% compared to women at the university level and that women with children with no education have a 36.75% increase up to 97.22 % compared to women at the university level.

Fertility desire decreased with socio-economic development and increased women's education level (Kebede et al., 2022). Educated women serve the country in politics, business, and other fields. It indicates the high usage of contraceptives by women to prevent unwanted pregnancies. Figure (3) illustrates fertility desire declines, especially for educated women. According to the study, women's fertility desire varies from 0 to 2, less than 2, between 2–3, and above 3. Therefore, the

study focuses on the fertility desire for 2–3 children, and these young women are 15-25 years old, ranging from 83.33% with no education to 75.9% with university degrees and 75.8% with university level, reflecting the country's 2030 projection of 3 children per woman (NISR, 2014).

Cohabitation is strongly linked with education level, and the culture is copied from the West. The cohabitation practice, especially in rural areas, is linked to a lack of financial means, with 37.82% of women with a secondary education cohabiting. The Western cohabitation model popular in universities, famous people, such as football players and the domain of entertainment in urban areas is 19.23%.

The findings and discussion of results lead the researchers to conclude that female education level is a significant factor in determining birth rates. Cohabitation strongly increases in universities with the western model. Young girls' fertility desire decreases as their education level rises for various reasons. Thus, the examined thematic factors corroborate the hypothesis that increased educational opportunities for women affect fertility desire. Since SSA countries are undergoing a demographic transition and the advancement of women's education is closely linked to birth control at all levels, this study hopes to emphasise the promotion of women education programmes by SSA country leaders.

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