Household Poverty and Contraceptive Non-Intention Among Women of Childbearing Age in Union in Burundi: Validity of the Theory of Intergenerational Flows of Wealth

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Abstract

The Republic of Burundi wants to control population growth by increasing the prevalence of contraception by 1.5% per year. However, the intention to use modern contraception is declining among women of childbearing age. The proportion of women wishing to use contraception has dropped from 66% in 2010 to 53% in 2016–2017. This research aims to verify whether household poverty is at the root of this contraceptive non-intention of women whose couples hope for better wealth from a large group of offspring. Data from the 2010 and 2016–2017 Demographic and Health Surveys of Burundi were analyzed using multilevel logistic regression. There is no significant difference in contraceptive non-intention found between women from poor households and those with medium standards of living (p = .587 > .05) or rich (p = .098 > .05) in 2010 or between women from wealthy households and those from poor (p = .101 > .05) or medium (p = .689 > .05) standards of living in 2016–2017. Standard of living does not count among the principal factors of contraceptive non-intention in Burundi. Instead, attention should be paid to sociocultural factors.

Keywords

Burundi; contraceptive non-intention; household poverty; intergenerational wealth flows; multilevel analysis

Introduction

Standard of living has often been emphasized in explaining sexual and reproductive behavior among women. To illustrate the high fertility of countries in the South, mainly in Africa, Caldwell (1976) presented intergenerational flows of wealth as the basis for the high fertility observed. According to this theory, couples rely on large offspring to ensure their old age (Doliger, 2008; Nganawara, 2017). In contrast to the rising standard of living that created new needs and demanded the quality of offspring rather than the quantity in North America, Caldwell (1976) found that in the context of developing countries, household poverty encouraged couples to desire more children from whom they hoped for old age insurance. This theory, developed in 1976, still seems valid in some African countries that have not yet been able to reduce fertility sustainably, a consequence of low adherence to modern contraception (Tabutin & Schoumaker, 2020).

In Burundi, the population's standard of living is among the lowest in the world. In 2019, the national report on human development showed that 64.5% of the Burundian population lived below the poverty line (UNDP, 2020). In addition to youth unemployment and the underemployment of most people, Burundi's socio-economic framework is characterized by pressure on vital needs and basic social sectors. For a population of which 90% claim to derive their livelihood from working the land, the average land area per farm and household has fallen to 40 acres, below the Food and Agriculture Organization (FAO) threshold of 90 acres. The small size of the land per household explains why 90% of the complaints received in the courts are related to land conflicts (Kamuragiye & Buzingo, 2019). Coupled with recurrent climatic irregularities, land scarcity has already resulted in situations of food insecurity that reached 45.5% of the population in 2017, climate refugees, and non-negligible health problems (PAM, 2017; Sindayihebura & Nkunzimana, 2020). In the sectors of education and health, indicators still exceed the thresholds set by the United Nations Children's Fund and the World Health Organization (Kamuragiye & Buzingo, 2019; Manirakiza, 2008).

This pressure situation strongly correlates with an essentially natural population growth that leads to high demand for vital needs and basic social services (Kamuragiye & Buzingo, 2019; Manirakiza, 2008). To achieve its national and global development goals, Burundi would like to reach the fertility of 3 children per woman and 2% growth by 2027 (Republic of Burundi, 2018). To reduce fertility, which is 5.5 children per woman, and growth, which is 2.4% per year, Burundi relies on the massive use of contraception, with an annual increase of 1.5%. However, the latter is 0.5% (Kamuragiye & Buzingo, 2019). Contraceptive practice is still in its infancy, with an average prevalence of 29% in 2017 (MPBGP et al., 2017). Less promising, expressed intentions toward contraception are fading. Between 2010 and 2017, levels of expressed intentions among women in union regarding the use of modern contraception declined by 13%, from 66% to 53% (ISTEEBU et al., 2012; MPBGP et al., 2017).

According to the New Family Economy theory, the increased contraceptive practice would no longer be a wish but a reality in this context (Becker, 1960; Easterlin, 1975). Although it is not the income increase that creates the new needs, it is a socio-economic and demographic situation that invites a rethinking of fertility to ensure a balance with available resources. Given the inaction and/or indifference of fertility pioneers, to mean women in union, regarding the decline of the intention to use contraception, one may wonder whether household poverty does not lead to a large offspring among women in union. The hypothesis underlying this study is that women living in low-income households are more likely not to intend to use modern contraception than those living in middle- and high-income households.

This study is not the first to test the influence of standard of living on contraceptive intentions. Apart from being newly conducted in the Burundian context, the impact of the living standard on contraceptive intention appears in studies done in Ethiopia (Dibaba, 2009; Lemessa & Wencheko, 2014; Tiruneh et al., 2016), Cape Town, Polokwane, and Dar-es-Salaam regions (Schaalma et al., 2009), Ghana (Ahuja et al., 2020), rural Bangladesh (Callahan & Becker, 2013), Kenya, and Nigeria (Babalola et al., 2015). However, it is important to note that the above studies use the "standard of living" variable as a control variable. The present study, which tests the validity of the intergenerational flow of wealth theory, has the originality of focusing on this variable to examine whether household poverty is among the factors that maintain contraceptive non-intention and thus delay the fertility transition in Burundi.

The theoretical framework follows this introduction. Then, the materials and methods are presented. After the presentation and discussion of the results, the conclusion constitutes the end of the paper.

Materials and methods

Data sources

The data analyzed were from the last two Demographic and Health Surveys of Burundi (DHSB II & III) that took place in 2010 and 2016–2017 (ISTEEBU et al., 2012; MPBGP et al., 2017). In collecting these data, the protocol and survey questionnaires were submitted to the National Ethics Committee for analysis and approval. They received the support of the ICF Institutional Review Board and one of the National Council for Statistical Information of Burundi.

Target population

This study targets 4,225 women (in 2010) and 6,990 women (in 2016–2017) aged 15–49 in a union, non-users of modern contraception at the time of the surveys, who expressed their intention about the use of contraception in the future.

Variables

The databases of the targeted surveys contain variables that can be used for this analysis. The dependent variable was based on the intention expressed by the women concerning the future use of contraception. It was re-coded in two values: 1 if the woman did not intend to use contraception, and 0 if the woman did. Household poverty, whose influence on contraceptive intentions was materialized by the "standard of living" variable. It was made from information captured, at the time of the survey, on the number and type of consumer goods owned by the households, goods ranging from a television to a bicycle or a car, housing characteristics such as the source of drinking water, the type of toilet used, and the flooring material. Through principal component reduction, scores for each household were constructed. National economic welfare quintiles were created by assigning the household score to each usual household member, ranking each person in the household population according to their score, and dividing the distribution into five equal categories, each representing 20% of the population. Five quintiles of well-being were thus established (poorest, poor, medium, rich,

richest). They were re-coded in three values (1 = poor; 2 = medium; 3 = rich). The other independent variables that were used as control variables were, by level, characteristics of the community/cluster (religion, region, and place of residence), of the household (spouse's age, spouse's level of education, spouse's occupation, spouse's desire for children) and those relating to the individual woman (knowledge of contraception, unmet need for family planning, age of woman, age at first marriage, number of sexual partners, number of children ever born, number of children desired, desire for additional children, experience of child death, number of surviving children, education level, occupation, media exposure, exposure to family planning messages, gestational status, amenorrhea status) (Table 2).

Data quality

The evaluation of the data quality shows a favorable assessment of their use. All 24 variables mobilized have non-response rates below 2%; thus, rates well below the 10% threshold recommended in the social sciences and humanities. The Myers' indexes of 19.35 and 14.85 found for the declarations of women's age in 2010 and 2016–2017, and those of 19.68 and 24.87 for men at the same dates, show that the data were of acceptable quality. Regarding the number of children ever born, Coale and Demeny's "A" index of 5.51 and 5.18, and Brass and Rachad's "B" index of 7.69 and 8.04, in 2010 and 2016–2017, respectively, show that the data were not of a nature to question the results, given that it was 7.73 and 7.06 in 2010 and 2016–2017, respectively, in the last five-year age group [P (7)]. The inferiority criterion of the minimum between the A and B indexes at female parity at reproductive exit [min (A, B) = A < P (7)] in case of correct reporting was met (Gendreau, 1993). Concerning the multi-collinearity between the independent variables, the realization of the correlation matrices between them shows that no correlation value reached 0.7 in 2010 and 2017. In addition, all values of the VIFs were below ten, and their averages did not exceed 2. Around the criteria already set, the regression equations were soluble. From all the above, we conclude that no multi-collinearity problem would compromise the results' quality (De Bourmont, 2012; Schoumaker, 2013).

Analysis method

The method of analysis used was binomial logistic regression. It was due to the qualitative and dichotomous nature of the dependent variable. This method estimates the probability of not intending to use modern contraception as a function of a standard of living and other independent variables mobilized (Masuy, 2013). Because the variables of analysis were more amenable to hierarchical classification at the community, household, and individual levels, the regression was considered using a multilevel approach. This was a method that allowed for disentangling influences across levels. In this study, by analyzing the impact of the household's standard of living on the risk of not intending to use modern contraception, this method allows for its intrinsic effect as a household characteristic, an effect obtained by controlling for the influence of community and individual characteristics related to the woman (Bringé & Golaz, 2017; Nganawara, 2016).

If P was the probability for a woman not to intend to use modern contraception and 1-P was the probability of having it, the logistic model regresses on the logit of P:

$$\text{Logit}\left(Y_{ijk}\right) = Ln\left[\frac{P\left(Y_{ijk}=1\right)}{1-P\left(Y_{ijk}=1\right)}\right] = \beta_0 + \beta_1 x_{ijk} + \beta_2 x_{jk} + \beta_3 x_k + v_k + u_{jk} + e_{ijk}\ ;$$

where $\boldsymbol{\beta_0}$ was the constant, and $\boldsymbol{\beta_1}$, $\boldsymbol{\beta_2}$, and $\boldsymbol{\beta_3}$ were the fixed coefficients of the variables, at the individual, household, and community levels; $\boldsymbol{x_{ijk}}$, $\boldsymbol{x_{jk}}$, $\boldsymbol{x_k}$ were the individual, household, and community variables; and $\boldsymbol{v_k}$, $\boldsymbol{u_{jk}}$, $\boldsymbol{e_{ijk}}$ were random terms or residuals at each level. Thus, this relationship allows us to express P as a function of L according to the relationship:

$$P = \frac{\exp(L)}{1 + \exp(L)} = \frac{\exp(\beta_0 + \beta_1 x_{ijk} + \beta_2 x_{jk} + \beta_3 x_k + v_k + u_{jk} + e_{ijk})}{1 + \exp(\beta_0 + \beta_1 x_{ijk} + \beta_2 x_{jk} + \beta_3 x_k + v_k + u_{jk} + e_{ijk})}$$

Logistic regression thus provides regression coefficients "$\boldsymbol{\beta_i}$" from which Odds Ratio (OR) or risk ratio of contraceptive non-intention [exp($\boldsymbol{\beta_i}$)] were calculated. The statistically significant influence on the standard of living was confirmed if and only if the probability associated with the risk of contraceptive non-intention was less than or equal to 5% ($p \leq .05$) (Rizzi, 2013).

Analytical tools

Multilevel logistic regression was run using Stata 15.0 software. Processing and formatting of the results table were performed using Microsoft Excel 2016.

Results

The full models (CM) confirm the suitability of multilevel modeling for this study. In both 2010 and 2016–2017, the probabilities associated with Wald Chi-square ($X^2 = 669.50$, $p < .001$ and $X^2 = 172.31$, $p < .001$, respectively) and likelihood ratios (LR = 91.22, $p < .001$ and LR = 454.37, $p < .001$, respectively) remain statistically significant at the 1% threshold. The 2010 data lend themselves to distinguishing two levels of analysis, whereas the 2016–2017 data allow prioritization of the data for all three levels. In all cases, the introduction of the independent variables into the empty model (M0) leads to an increase in variance at the community (from 0.408 to 0.484 in 2010 and from 1.691 to 1.176 in 2016–2017) and household level (from 10.058 to 17.237 in 2016–2017). In addition, the intra-community coefficient of variation increases in 2010 (11.03% to 12.82%), but decreases in 2016–2017 (from 11.24% to 8.04%) (Table 1).

This shows that community characteristics explain the observed differences between women in terms of contraceptive non-intention. The same was true of household characteristics in 2016–2017, where the intra-household variance varies from 78.12% to 85.26%. In sum, the random part shows that the analysis brings significant results and that the influence of the standard of living as a variable introduced in the model can be interpreted without risk of bias (Table 1).

Table 1: Parameters and Validity Test of Multilevel Modeling

Models' parameter	2010		2016–2017	
	M0	CM	M0	CM
Testing the model				
Chi-square of Wald		669.50***		172.31***
Likelihood ratio (Chi²)	133.09***	91.22***	634.89***	454.37***
Random game				
Household variance	N/A	N/A	10.058	17.237
Effect of models on variance/level of		N/A		71.40%

Models' parameter	2010		2016–2017	
	M0	CM	M0	CM
the household (%)				
Community variance	0.408	0.484	1.691	1.796
Effect of models on variance/level of the community (%)		18.50%		6.20%
Intra-household Correlation Coefficient (%)	N/A	N/A	78.12%	85.26%
Intra-Community Correlation Coefficient (%)	11.03%	12.82%	11.24%	8.04%

Note: **** p value < .001; N/A = Not Applicable*

In the fixed part, the complete models show that the standard of living does not significantly influence the risk of not intending to use modern contraception at the 5% threshold. In 2010, there was no significant difference between women in poor households and those in middle-income households (OR = 1.068, 95% CI [0.843, 1.353], $p = .587 > .05$) or rich households (OR = 1.212, 95% CI [0.965, 1.522], $p = .098 > .05$) in the risk of contraceptive non-intention. In 2016–2017, there was no difference between women from rich and poor households (OR = 0.689, 95% CI [0.442, 1.075], $p = .101 > .05$) or medium standard of living (OR = 0.909, 95% CI [0.571, 1.445], $p = .689 > .05$) in contraceptive non-intention. Among the household characteristics introduced in the model, only the spouse's age had a significant influence on this contraceptive non-intention ($p = .001 < .01$ in 2010; $p = .000 < .001$ in 2016–2017). In contrast, individual characteristics such as number of desired children ($p = .000 < .001$ in 2010 and 2016–2017), desire for additional children ($p = .000 < .001$ in 2016–2017), unmet need for family planning ($p = .000 < .001$ in 2010 and 2016–2017), exposure to family planning messages ($p = .003 < .01$ in 2010; $p = .000 < .001$ in 2016–2017) significantly explained contraceptive non-intention at the 1% threshold (Table 2).

Table 2: Effects of Independent Variables on Non-Intent to Use Modern Contraception

Variables and values	2010			2016–2017		
	OR	*p* value	95% CI	OR	*p* value	95% CI
Main study variable						
Standard of living						
Poor	Ref			0.689	$p > .05$	0.442 - 1.075
Medium	1.068	$p > .05$	0.843 - 1.353	0.909	$p > .05$	0.571 - 1.445
Rich	1.212	$p > .05$	0.965 - 1.522	Ref		
Control variables relating to women's characteristics						
Knowledge of modern contraception						
Knows about modern contraception	Ref			Ref		
Not familiar with modern contraception	3.150	$p < .01$	1.385 - 7.162	3.611	$p > .05$	0.242 - 53.948
Unmet family planning needs						
With the unmet needs of family planning	0.644	$p < .001$	0.532 - 0.779	0.489	$p < .001$	0.345 - 0.693
No unmet need for family planning	Ref			Ref		
Age of the woman						
Adolescent girls	0.651	$p < .001$	0.475 - 0.893	0.347	$p < .001$	0.195 - 0.617
Adults	Ref			Ref		
Elderly	4.674	$p < .01$	3.487 - 6.264	19.05	$p < .001$	9.506 - 38.184
Age at first marriage						
Under 20 years old	Ref			Ref		
Between 20 and 35 years old	0.743	$p < .01$	0.612 - 0.901	1.102	$p > .05$	0.786 - 1.545
Over 35 years old	0.420	$p > .05$	0.092 - 1.925	0.285	$p > .05$	0.036 - 2.286
Number of sexual partners						
One sexual partner	Ref			Ref		
More than one sexual partner	0.172	$p > .05$	0.014 - 2.062	0.162	$p > .05$	0.006 - 4.019
Number of children ever born						
Less than 3 children ever born	Ref			Ref		
Between 4 and 6 children ever born	0.727	$p > .05$	0.483 - 1.095	0.988	$p > .05$	0.432 - 2.258
7 or more children ever born	0.860	$p > .05$	0.458 - 1.613	0.799	$p > .05$	0.229 - 2.786
Number of children desired						
Desires 1 to 3 children	0.965		0.780 - 1.193	0.393	$p < .001$	0.275 - 0.562
Desires 4 to 6 children	Ref			Ref		
Desires 7 or more children	3.229	$p < .001$	2.474 - 4.215	11.79	$p < .001$	5.431 - 25.593

Variables and values	2010			2016–2017		
	OR	*p* value	95% CI	OR	*p* value	95% CI
Desire for additional children						
Still wants a child	Ref			Ref		
No longer wishes to have more children	0.989	$p > .05$	0.763 - 1.282	0.848	$p > .05$	0.549 - 1.290
Undecided	0.822	$p > .05$	0.465 - 1.452	5.061	$p < .05$	1.094 - 23.403
Infertile	1			1325	$p < .001$	38.018 – 46,214.22
Experience of child deaths						
No child deaths	Ref			Ref		
Death of children	1.035	$p > .05$	0.816 - 1.314	0.898	$p > .05$	0.581 - 1.390
More than one child death	1.437	$p < .05$	1.022 - 2.020	1.420	$p > .05$	0.700 - 2.881
Number of surviving children						
No surviving children	0.490	$p < .01$	0.327 - 0.735	Ref		
1 to 3 surviving children	Ref			1.625	$p > .05$	0.732 - 3.611
4 to 6 surviving children	1.241	$p > .05$	0.843 - 1.827	4.113	$p < .05$	1.207 - 14.007
7 or more surviving children	0.817	$p > .05$	0.449 - 1.488			
Women's level of education						
No education	Ref			Ref		
Primary	1.025	$p > .05$	0.839 - 1.255	0.797	$p > .05$	0.563 - 1.128
Secondary and above	0.870	$p > .05$	0.495 - 1.530	0.604	$p > .05$	0.289 - 1.260
Occupation of the woman's spouse						
Not in the labor force	0.602	$p < .01$	0.411 - 0.882	1.342	$p > .05$	0.660 - 2.728
Farmers	Ref			Ref		
Trade/Other informal sector	0.728	$p > .05$	0.374 - 1.417	0.779	$p > .05$	0.324 - 1.872
Government or private executives	1.269	$p > .05$	0.667 - 2.415	1.073	$p > .05$	0.510 - 2.259
Other activities	1.068	$p > .05$	0.049 - 23.382	1.281	$p > .05$	0.164 - 10.008
Exposure to the media						
Low exposure	1.062	$p > .05$	0.866 - 1.303	Ref		
Medium exposure	Ref			0.943	$p > .05$	0.637 - 1.396
High exposure	0.933	p > .05	0.625 - 1.391	0.789	$p > .05$	0.314 - 1.984
Exposure to family planning messages						
Informed about family planning	0.744	$p < .01$	0.611 - 0.906	0.430	$p < .001$	0.294 - 0.632
Not informed of family planning	Ref			Ref		
Gestational status						
Pregnant	0.283	$p < .001$	0.219 - 0.366	0.014	$p < .001$	0.007 - 0.030

Variables and values	2010			2016–2017		
	OR	*p* value	95% CI	OR	*p* value	95% CI
Not pregnant	Ref			Ref		
Status about menorrhea						
In amenorrhea	0.358	$p < .001$	0.290 - 0.446	0.064	$p < .001$	0.037 - 0.111
Not in amenorrhea	Ref			Ref		
Control variables relating to the characteristics of the household						
Age of spouse						
Youth spouse	0.601	$p < .01$	0.450 - 0.801	0.250	$p < .001$	0.145 - 0.430
Adult spouse	Ref			Ref		
Elderly spouse	1.171	$p > .05$	0.916 - 1.497	1.930	$p < .01$	1.211 - 3.074
Spouse's level of education						
No education	0.974	$p > .05$	0.803 - 1.181	1.185	$p > .05$	0.832 - 1.687
Primary	Ref			Ref		
Secondary and above	0.945	$p > .05$	0.605 - 1.477	1.332	$p > .05$	0.716 - 2.480
Spouse's occupation						
Not in the labor force	1.498	$p > .05$	0.584 - 3.846	1.032	$p > .05$	0.475 - 2.242
Farmers	Ref			Ref		
Trade/Other informal sector	1.254	$p > .05$	0.890 - 1.766	1.372	$p > .05$	0.848 - 2.218
Government or private executives	1.165	$p > .05$	0.903 - 1.503	1.071	$p > .05$	0.667 - 1.720
Other activities	1.517	$p > .05$	0.552 - 4.170	2.010	$p > .05$	0.641 - 6.301
Desire for children of the husband						
Desires the same number of children as the woman	Ref			Ref		
Desires more children than the woman	1.249	$p > .05$	0.981 - 1.590	0.930	$p > .05$	0.626 - 1.383
Desires fewer children than the woman	1.012	$p > .05$	0.774 - 1.322	0.627	$p < .05$	0.410 - 0.959
Control variables relating to the characteristics of the community						
Region of residence						
North	0.422	$p < .001$	0.299 - 0.595	0.320	$p < .001$	0.186 - 0.551
Central East	Ref			Ref		
West	1.316	$p > .05$	0.931 - 1.858	1.049	$p > .05$	0.576 - 1.911
South	0.920	$p > .05$	0.655 - 1.290	1.638	$p > .05$	0.946 - 2.838
Bujumbura City	1.555	$p > .05$	0.693 - 3.490	0.779	$p > .05$	0.247 - 2.454
Place of residence						
Urban	0.869	$p > .05$	0.457 - 1.654	1.104	$p > .05$	0.506 - 2.412
Rural	Ref			Ref		

Variables and values	2010			2016–2017		
	OR	*p* value	95% CI	OR	*p* value	95% CI
Religion of women in the community						
Catholic	Ref			Ref		
Protestant	1.669	$p < .001$	1.360 - 2.048	4.496	$p < .001$	2.984 - 6.776
Muslim	1.308	$p > .05$	0.647 - 2.644	0.603	$p > .05$	0.223 - 1.631
Adventists/Jehovah's Witnesses	1.127	$p > .05$	0.630 - 2.014	3.186	$p < .05$	1.297 - 7.825
Other religions	1.179	$p > .05$	0.669 - 2.079	0.305	$p < .05$	0.096 - 0.966

Discussion

By studying the influence of the standard of living on the intention of Burundian women to use modern contraception, this study sought to verify the validity of the theory of intergenerational flows of wealth. In other words, the aim was to verify whether household poverty is at the root of the non-intention of women in a union in Burundi to use contraception. Using data from the 2010 and 2016–2017 Demographic and Health Surveys of Burundi, multilevel logistic regression analysis was used to determine the intrinsic role of the standard of living on the phenomenon under study.

The results show that household standard of living does not significantly influence the risk of not intending to use modern contraception among women aged 15–49 in a union in Burundi ($p > .05$). Despite the decline in the standard of living and the fall in the population's purchasing power, this poverty does not explain the non-intention of contraceptive practice that the country needs to reduce fertility and achieve development goals.

However, contrary results, notably those showing a higher probability of contraceptive non-intention among women from poor households than among those from middle- or high-income households, have been found in some studies. Indeed, the analyses of Dibaba (2009), Schaalma et al. (2009), and Tiruneh et al. (2016) converged on the fact that women from poor households were the most likely to have contraceptive non-intention than those from high living standard households. Machiyama and Cleland (2013) also found that women from poorer households were more likely to have an unmet need for family planning without access or positive attitudes toward contraception. It is in this case that one can hypothesize intergenerational flows of wealth. These low-income households are not concerned with limiting births to having the intention to use contraception. Women prefer to welcome the child as a gift from their God, just as wealth is not their predilection (Kamuragiye & Buzingo, 2019).

Only in studies by Ahuja et al. (2020), Babalola et al. (2015), and Lemessa and Wencheko (2014), conducted in rural Ethiopia, Ghana, Nigeria, and Kenya, do women from high-income households show reluctance to use contraception than those from low-income households. In this case, two hypotheses can be put forward: the threshold effect of standard of living and the weight of cultural factors. In the first case, women from middle-income households whose vital needs are covered, with no thoughts about the quality of their children, do not concern themselves with family planning (Doliger, 2008; Leridon, 2015). This is, for example, the case of a generation of Thai-Muslim women born between 1982 and 1997 from whom income of at least 30,000 Thai baht (US$ 827), employment opportunities, and a sense of having help caring for children increased the tendency to have more children (Smuseneto, 2019). However, the threshold effect is not sufficient to explain contraceptive non-intention because, if one were to hold to the new family economy theory, women living in high living standard households would prefer to invest in quality than in the number of children (Doliger, 2008; Leridon, 2015; Nganawara, 2017). Thus, the standard of living alone would not be sufficient to explain the contraceptive non-intention of women from high-income households. Other sociocultural factors must be taken into account.

For this reason, other factors must be mobilized in Burundi, where the standard of living is not a determining factor in explaining the non-intention to use modern contraception. On the one hand, it would be the natalist spirit and the instinct of extinction as a consequence of the infant and child over mortality that has traumatized the Burundian soul for a long time

(Kamuragiye & Buzingo, 2019; Manirakiza, 2008). In this study, this would be justified by the fact that the variables "number of surviving children" and "number of desired children" remain significant at the 1% threshold in 2010 and 2016–2017 and that women with a high number of desired or surviving children are the most likely to have the non-intention to use modern contraception than others (Table 2).

On the other hand, it would be the influence of the community that is still repressing sexual and reproductive behaviors that it deems not following the "divine will." This would be justified by the significance of the "religion in the community" variable, where Protestant women are more likely not to intend to use contraception than Catholic women and women of other religions. In addition, the significance of the "region of residence" variable suggests the central role of the community's influence. Women from the Northern region are 58.8% less likely not to intend to use contraception than those from the Central-Eastern region and the other regions at the 1% threshold. Thus, it can be inferred that in addition to religion, other sexual and reproductive behaviors that vary by region need to be understood. The significant influence of the variables of family planning service supply, such as the visit of family planning agents, and exposure to family planning messages, shows that this social context could be changed by media awareness campaigns and household visits while controlling for other sociocultural factors that are very determinant (Sindayihebura et al., 2022).

Finally, by finding the absence of a significant influence of standard of living on contraceptive non-intention, this study shows that the poverty of Burundian households cannot be put forward as the primary explanatory factor of this phenomenon. The theory of intergenerational flows of wealth is not confirmed in this context. Other factors, particularly sociocultural ones, which are shown to be very significant, should be considered. Further studies would focus more on the sociocultural variables in a quantitative approach but also in a qualitative one for a good understanding of the phenomenon.

Conclusion and recommendations

The objective of this study was to test the validity of the theory of intergenerational flows of wealth, assuming that the contraceptive non-intention of women in union is related to the poverty of households that hope to ensure their social protection through a large offspring. By analyzing data from the last two Demographic and Health Surveys of Burundi (DHSB 2010 & 2016–2017), the multilevel logistic regression shows that the standard of living does not significantly influence the non-intention to use contraception among women in a union in Burundi. Indeed, household poverty is not the main cause of women's disinterest, and the theory of intergenerational flows of wealth is not confirmed in this context. On the other hand, other sociocultural variables related to fertility are strongly linked to this phenomenon.

These results show that couples in Burundi do not rely on large offspring to ensure their old age. Not intending to use modern contraception is therefore based on a cultural background that exalts numerous offspring and/or is not favorable to the use of modern contraception. Thus, to succeed in reducing fertility to complete the demographic transition and achieve sustainable development objectives, couples must be made aware of the need to limit births for the well-being of their households and sustainable development.

By applying the theory of intergenerational flows of wealth to contraceptive non-intention, this study provides a perspective for analyzing the influence of the standard of living that does

not appear in the literature. Since no significant influence was found, it suggests examining the influence of sociocultural factors. Moreover, the "standard of living" variable is insufficient to account for the effect of poverty, hence the idea that the qualitative approach might be better for considering women's experiences between poverty and childbearing.

Strengths and limitations of the study

This study, which is not the first to include the standard of living in studying women's contraceptive intentions, has the merit of identifying its influence and the direction of the relationship to test the validity of the intergenerational wealth flow theory. Although not the first to use the multilevel approach, this study has the merit of producing more robust indicators than simple regression. One of the study's limitations lies in the operationalization of the concept of household poverty through the single variable "standard of living," whereas other variables not taken into account (household income or expenditure, subjective poverty, etc.) could be mobilized to understand this phenomenon better.

Ethical approval

The protocol and questionnaires for the 2010 and 2016–2017 DHSB from which we extracted the data used in the analysis were submitted to the National Ethics Committee for review and approval and were approved by the ICF Institutional Review Board and the National Statistical Information Council of Burundi. Thus, we have the guarantee of being within the good margins of ethical respect in the scientific process.

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