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Fertility Preferences and Level of Family Planning in Rwanda: Case of Huye District

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Abstract
The eradication of poverty and hunger is the first of the Millennium Development Goals (MDGs) established by the United Nations. One of the Rwanda's commitments is the fulfillment of this goal as indicated in its own long term Vision 2020 aimed at enabling Rwandans to emerge from under-development and poverty status by achieving economic growth objectives in combination with social indicators objectives. As it has been researched that the major cause of poverty in developing countries is the high rate of their population growth, this paper is aimed at assessing the fertility preferences and the level of family planning in Rwanda as a tool to poverty eradication. The paper also presents some challenges and some other pathways to improve the socio-economic welfare of Rwandan population. In this paper descriptive methods have been used to present and analyze data and a Pearson Chi square test has been used to study the association between variables. The results shows that the knowledge of contraception is universal (99%) but the use of contraception methods for family planning is still very low (37%). On the average fertility preferences are 3.2 children which are good if realized. The general conclusion that emerges from the study is that in order to reduce poverty, family planning is a must but lot more are to be done. Among other things, a focus on increasing rural income and agriculture output.

Keywords: fertility preferences, family planning, poverty, MDGs, vision 2020

INTRODUCTION

Rwanda is a poor rural country with about 90% of the population engaged in (mainly subsistence) agriculture. It is the most densely populated country in Africa; is landlocked; and has few natural resources and minimal industry. Primary exports are coffee and tea (Republic of Rwanda, 2002a). The 1994 genocide destroyed Rwanda's fragile economic base, severely impoverished the population, particularly women, and eroded the country's ability to attract private and external investment. However, Rwanda has made significant progress in stabilizing and rehabilitating its economy to pre-1994 levels, although poverty levels are still higher until now.

The third Rwanda General Census of Population and Housing of 2002 has shown a total population was 8,128,553 people with natural growth rate of 2.6 % and total fertility rate of 5.9 (Republic of Rwanda,2004). This is challenge to poverty reduction and there is a strong need to reduce population growth as to ensure the equilibrium between Population and available resources. Worried to improve the standard of living of its population, the Government of Rwanda has looked for strategies touchy to ensure adequacy between population growth and available resources through different campaigns.

With the current Vision 2020 objective of combating poverty, Rwanda is embarking on a comprehensive program of privatization and liberalization with a goal to attaining rapid and sustainable economic growth.

This paper is motivated by the willingness of the Rwandan population to adopt family planning and to evaluate the three children per family policy which has been proposed since 2003 as to adjust economic growth and population growth since still the major causes of poverty identified by ubudehe1 survey respondent were lack of land, high population growth, poor soils, unpredictable weather and lack of livestock and exit strategies out of poverty were identified as family planning, paid employment, commerce and livestock (BAHAIRWE, 2007)

1 *Ubudehe* is a traditional practice and culture of collective action to solve community problems. It has been adopted by the Government of Rwanda as an approach to fight poverty. It is present at 9,000 cells all over the country.

LITERATURE REVIEW

Theory on Population Growth

The relationship between population and resources has been a major concern of different authors in last decades. A large number of people are to be an advantage for a society and on the other hand a high population growth is hindered by lack of subsistence means. Many controversies on population view have been developed which the famous are the population theory of Malthus and one of Ester Boserup we present briefly in this report.

Malthus saw poverty as a positive check to population growth, believing people without means less likely to have children whom they could not support. In his book "*An Essay on the Principle of Population*" (1798), Thomas Malthus underlined that the misfortune of the people comes from their tendency to increase more than does the available quantity of subsistence resources that is the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, increases in a geometrical ratio whereas the resources increase in arithmetic progression (Malthus, 1798). Malthus argued that two types of checks hold population within resource limits: *positive* checks, which raise the death rate; and *preventive* ones, which lower the birth rate. The positive checks include hunger, disease and war; the preventive checks, abortion, birth control, prostitution, postponement of marriage and celibacy.

Neo-Malthusians argue that population explosion will exercise a triple effect on capitalization:

- First, there will be a decrease in quantity of per capita income,
- Then, there will be a diversion of investment from productive sector to social expenditures,
- And finally, there will be a decrease in saving rate due to excess expenditures.

Ester Boserup (1965) has opposed vigorously Malthus by putting on clear positive effects of population growth on agricultural production. In her book, "*The Conditions of Agricultural Growth: the Economics of Agrarian Change under Population Pressure"*, she cleared that population levels determine agricultural methods, rather than agricultural methods determining population (via food supply).

A major point of her book is that "necessity is the mother of invention". Malthus' theory says that the size and growth of the population depends on the food supply and agricultural methods. But, Boserup's theory opposes this by saying that the agricultural methods depend on the size of the population. Malthus states that in times when food is not sufficient for everyone, the extra people will have to die. However, Boserup states that in those times of pressure people will find ways to increase the production of food by increasing workforce, machinery, fertilizers, etc. A great number of recent researches are in line with Malthus so as to conclude that nowadays population growth, if it does not constrain the improvement of the standard living level of families, particularly the poor, it slows down it in non-negligible way.

The Effects of Population Growth on Level of Standard of Living in Rwanda

Given limited country's resources for the supply of food, education, health services, etc. demographic pressure remains in heart of strategy for a better living standard in Rwanda. Schooling cost that increases depending on the number of children to school behaves on the propensity of the parents to send their children at school. According to EICV1 (Republic of Rwanda, 2002.b) a child was costing on average Rwf 2038 (≈USD 4.3) at primary level, Rwf 46332 (≈USD 97.5) at secondary level and Rwf 136433(≈USD 287) at higher education, of course in Public institutions! Although in 2003 H.E Paul Kagame, the president of the Republic of Rwanda, initiated the free primary education and free nine years basic education since 2006 it is not easy to afford higher education which is becoming private and the average cost at higher education level should be at Rwf 1200000 (≈USD 1988) today and it increases government expenditures on social infrastructure rather than economic infrastructure.

The pressure on land in Rwanda led to low per capita availability of land. From the agricultural survey conducted in 2008 (Republic of Rwanda, 2010), it was revealed that, Rwanda counted 1,674,687 agricultural households at the time, accounting for 85% of the total number of household of the country. The average area of farmlands was of 0.76 Ha by household in 2008, divided into about 4 blocks of lands. Those farmlands were on a total area of 1,280,750 Ha, which constituted half of the country total area. In addition, it is noticed that about 80% of farmlands do not measure more than 1 Ha each.
Their number increased over by 9 percentage point between 2006 and 2009. The critical challenge to Rwandan agriculture is that of identifying alternative vocations to the surplus labour or to reduce the pressure of population on the available meagre land area for cultivation.

If the family size and closed pregnancies affect on mothers' health they also affect negatively the rest of family especially for children since a large family needs enormous expenses to insure children's medical care (Republic of Rwanda, 2009a.). One of major problems confronting the health care system in Rwanda is to solve two financial challenges within the concept of poverty: improving financial access

and equal access to the health care system plus mobilizing of internal resources to increase financial viability of the health care services. The Rwanda government has instituted a system of mutual health insurance to respond to these problems. But still malnourishment is a big problem for children of under-five years, lack of access to safety water, housing, etc. A large number of children is a challenge to get out this critical situation (Republic of Rwanda, 2009a.).

When it comes to family income a high population growth rate of 3% annually increases the absolute number of people living in poverty (Republic of Rwanda, 2007) . This population trend is impeding the progress made in poverty reduction. Note that GDP per capita has been used as an indicator of a country's economic strength and has been judged to be indicator of the average standard of living of individual members of the population. As such, economic planners and forecasters used the GDP per capita in monitoring economic growth trend for time series.

All the points mentioned above require Rwandan population to adopt family planning for better standard of living.

DATA AND METHODOLOGICAL APPROACH

The general hypothesis of the study is that in order to eradicate poverty and hunger in Rwanda, *a focus on family planning for Rwandan population must be in the first priorities given country's limited subsistence means and negative correlation between population and economic growth.* This hypothesis reflects Rwanda's national perspective and linked to the country's development plans *(*EDPRS and VISION 2020) and policies for better and sustainable development.

The study made use of the available secondary data as well the primary data that were collected from a sample study conducted in the Huye district of Rwanda. The secondary data analysis concentrated the period between 2000 and 2008 due to the lack of update data. One of the important sources of secondary data was the household surveys known as *Enquête Intégrale sur les Conditions de Vie des ménages de Rwanda* (EICV2) of 2000-1 and 2005-06. Another important source is the publications of the National Institute of Statistics, Rwanda (NISR) and the Ministry of Finance and Economic Planning, Rwanda.

2 EICV surveys collected detailed information on household consumption, including the consumption of home produced items. This information is used to quantify households' standard of living in monetary terms and is the basis for measuring consumption poverty. Households are defined as poor whose real expenditure per equivalent adult is calculated as being below the poverty line set at $1 per day per person by the World Bank.

The present study also drawn primary data on family planning and fertility preferences from a sample survey of 200 households (chosen from 6 sectors of the Huye district of the Southern province of Rwanda; the survey was done in August 2010) and to collect data, we have used administrated questionnaire drawn from Households and women questionnaires of Demographic and Health Survey. The 200 households in Huye district were selected by using simple random sampling method. After, identifying the Huye sectors as our clusters, the six sample sectors (Rusatira, Ruhashya, Mbazi, Karama, Gishamvu, and Mukuru) were selected randomly. From each sector a random sample of 35 households were selected. However, from 10 households we did not get sufficient data due the absence of household head(s) at the time of the survey. After excluding those 10 households, we used the information (the sample households were interviewed with a structured interview schedule) from 200 households for the present analysis.

The methodological approach presented in this paper in the analysis of the data is a simple descriptive analysis by use simple statistical techniques like frequency tables, percentages, and growth rates. The Pearson Chi-square test was also used to compare the use of family planning among men and women and the fertility preferences given the number of living children for our respondents. The value of the test-statistic is

$$\chi^2 = \sum_{i=1}^{r}\sum_{j=1}^{c}\frac{(O_{ij}-E_{ij})^2}{E_{ij}} \qquad (1)$$

Where O_i = an observed frequency, E_i = an expected frequency, r = number of rows, c = number of columns of contingency table.

RESULTS AND DISCUSSIONS

Knowledge of Contraception

The family planning requires the use of contraceptive with the prior knowledge of at least one contraceptive method. Different methods covered by the questionnaire fell into two categories:

- ✓ **Modern methods:** these include voluntary surgical contraception (sterilisation), hormonal contraception methods (pill, injectables, implants), barrier methods (condom), emergency contraception method (morning after pill) lactational amenorrhea method (LAM), and the standard days method (SDM)/cycle beads.
- ✓ **Traditional methods:** these include the rhythm or periodic abstinence method, withdrawal method and so called "folk" methods such as herbs, amulets, tea infusions, and other methods of this type.

The results concerning knowledge of contraceptive methods for women &men (15-49) for a total number

of 221 (158 currently married) men and 292 (202 currently married) women are presented in the table below:

Table 4.a: Knowledge of contraceptive methods

Method	All women	currently married women	All men	Currently married men
Any method	96.4%	99.1%	97.3%	99.5%
Any modern method	98.3%	98.7%	98.7%	99.2%
Any traditional method	78%	84.3%	89.3%	91%

Source: Authors creation from collected data, August 2010.

The results in table 4.a show that knowledge of family planning is nearly universal in Huye District, men and women are equally familiar with contraception whether they are married or not (sexually active unmarried) and also women and men are more familiar with modern methods than traditional methods.

Past and Current Use Of Contraceptive Methods

A great number of recent researches are in line with Malthus so as to conclude that nowadays population growth, if it does not constrain the improvement of the standard living level of families, particularly the poor, it slows down it in non-negligible way. Women and men who said that they had heard any contraceptive method(s)-that is 215 men (157 currently married) and 282 women (200 currently married) were asked if they had ever used the methods so as to measure the past use of contraception and women of childbearing age were asked if they were currently in use of any contraceptive methods. The results are shown in table 4.b below

Table 4.b: Past and current use of contraceptive methods

Method	All women who used	Currently married women who used	All women who in use	Currently married women in use	All men who used	Currently married men
Any method	38.4%	54.2%	35.2%	35.2%	36.7%	52.4%
Any modern method	27.1%	43.1%	25.6%	25.6%	28.1%	17.3%
Any traditional method	19.2%	26.3%	10.2%	10.2%	28.4%	45.2%

Source: Authors creation from collected data, August 2010

The table 4.b shows that at most two in five women (38.4%) have used a method of contraceptive at some time. Traditional methods have been used less frequently than modern methods. The same table shows that the ever use of contraception is much higher among married women than all women. For all women, nearly one in four women (24.8%) is currently using contraceptive methods. Contraceptive prevalence among married women at the time of the survey was 35.2% for any method; 25.6% for modern ant 10.2% for traditional method.

Among all men, at most two in five (36.7%) have used a contraceptive method at some time in their live. Traditional methods have been used more often than modern methods. Married women who were not using a contraception method at the time of survey were asked whether they planned to use in the future. Nearly three in four (73.4%) reported that they plan to use a contraceptive method. By comparison, more than a quarter of women (25.4%) said that they did not intend to use contraceptive in the future while 1.2 % were not sure. Women who were not using contraception and do not plan to use it in the future were asked to give their reasons: 60% of women gave reasons relating to fertility (menopause or hysterectomy); 13% of women said they were opposed to the use of contraception whether by husband or by religious prohibitions and 27% gave reasons including health concerns and fear of side effects from contraceptive methods.

The Pearson chi-square test has been used to compare the use of contraceptive methods among men and women on the basis of the 4.c contingency table below.

Table 4.c: Contingency table for use of contraceptive methods

	Men	Women	Total
Has ever used	79 (80.90)	108 (106.11)	**187**
Not used	136(134.11)	174 (175.90)	**310**
Total	**215**	**282**	**497**

Source: Authors creation from collected data, August 2010.

The computed chi-square of 0.126 is far away less than the tabulated Chi-square at 5% level of significance with one degree of freedom which is 3.84. We fail to reject the null hypothesis and we conclude that the use of contraceptive methods is the same among men and women interviewed.

Fertility Preferences

Data on fertility preferences were also collected as to evaluate the effectiveness of couples' efforts to control their own fertility and to assess future contraceptive needs for not only for birth spacing, but also to limit the total number of births.

Table 4.d: Fertility preferences of married women by number of living children

	Number of living children						Total
Fertility Preferences	**0**	**1**	**2**	**3**	**4**	**5+**	**15-49**
Have another soon	50.0%	25.7%	7.1%	5.4%	3.4%	3.9%	10.0%
Have another later	16.7%	48.6%	54.8%	27.0%	10.3%	7.8%	29.0%
Have another , undecided when	16.7%	14.3%	9.5%	13.5%	6.9%	3.9%	9.5%
Undecided	16.7%	5.7%	7.1%	10.8%	6.9%	3.9%	7.0%
Want no more	0.0%	5.7%	21.4%	40.5%	62.1%	70.6%	40.0%
Declared infecund	0.0%	0.0%	0.0%	2.7%	10.3%	9.8%	4.5%
Number of respondents	**6**	**35**	**42**	**37**	**29**	**51**	**200**

Source: Authors creation from collected data, August 2010.

The results in table 4.d show that nearly one in two women (40%) reported wanting no more children, while 48.5% wanted to have another child. Among the women who wanted more children in the future, a majority (29.0%) want to delay the next birth by two or more years. So, overall, 69% of women either want no more children or want to delay the next birth for two years or more. This means that three of four married women can be considered potentially favourable toward family planning. The results also show that the percentage of women who do not want another child increases steadily with the number of surviving children. The Pearson chi-square test has been used to test whether there is an association between fertility preferences and the number of surviving children for our respondents.

Table 4.e: Contingency table for use of contraceptive methods among men and women

	Number of living children						Total
Fertility Preferences	**0**	**1**	**2**	**3**	**4**	**5+**	**15-49**
Have another soon	3 (0.6)	9 (3.5)	3 (4.2)	2 (3.7)	1 (2.9)	2 (5.1)	20
Have another later	1 (1.7)	17 (10.1)	23 (12.2)	10 (10.7)	3 (8.4)	4 (14.8)	58
Have another , undecided when	1 (0.6)	5 (3.3)	4 (4.0)	5 (3.5)	2 (2.8)	2 (4.8)	19
Undecided	1 (0.4)	2 (2.3)	3 (2.9)	4 (2.6)	2 (2.0)	2 (3.8)	14
Want no more	0 (2.4)	1 (14.0)	9 (16.8)	15 (14.8)	18 (11.6)	36 (20.4)	80
Declared infecund	0 (0.3)	0 (1.6)	0 (1.9)	1 (1.7)	3 (1.3)	5 (2.3)	9
Number of respondents	**6**	**35**	**42**	**37**	**29**	**51**	**200**

Source: Authors creation from collected data, August 2010.

The computed chi-square of 95.62 is greater than the tabulated Chi-square at 5% level of significance with 25 degree of freedom which is 37.65. We reject the null hypothesis and we conclude that the fertility preference is associated with number of living children. Women with no or less number of children prefer to have more other children.

Ideal Number of Children

Women's reproductive behaviour can be influenced by the ideal number of children they would like to have and the ideal number of children their husband/partner would like to have. To determine the ideal number of children all women surveyed were asked one of the following questions:

- ✓ To women with no living children: *if you could choose the exact number of children you would like to have in your lifetime, how many would you have?*
- ✓ To women with living children: *if you could go back to the time to when you had no children and choose the exact number of children you would like to have in your lifetime, how many would you have chosen?*

The responses to the questions are presented in below with 5.15% of women who were not able to give a

numeric response, giving instead a general answer such as "I don't know", "However many God gives me", or "Any number".

Table 4.f: Ideal number of children

	Number of living children						
Ideal number of children	**0**	**1**	**2**	**3**	**4**	**5+**	**15-49**
0	5.68%	2.86%	4.76%	8.11%	6.90%	3.92%	5.32%
1	5.68%	8.57%	9.52%	5.41%	6.90%	3.92%	6.38%
2	22.73%	22.86%	19.05%	13.51%	10.34%	11.76%	17.73%
3	34.09%	28.57%	28.57%	29.73%	13.79%	11.76%	25.89%
4	14.77%	14.29%	21.43%	35.14%	20.69%	27.45%	21.28%
5+	11.36%	17.14%	11.90%	8.11%	41.38%	41.18%	20.21%
Non-numeric responses	5.68%	5.71%	4.76%	0.00%	0.00%	0.00%	3.19%
Number of respondents	**88**	**35**	**42**	**37**	**29**	**51**	**282**
Mean ideal number of Children	**2.86**	**3.00**	**2.93**	**3.03**	**3.59**	**3.78**	**3.16**

Source: Authors creation from collected data, August 2010.

The results in table 4.f show that, overall, the average ideal number of children reported by women in Huye District is 3.16 children. The results show a positive correlation between current family size and ideal family size. The mean ideal size ranges from 2.86 for all women with no children, to 3.78 for those with 5 children or more. The above results give a hope of positive impact of three children per family policy as an implementation of family planning since these data suggest that if the wishes of younger women are realized, there would be a substantial decrease in fertility.

CONCLUSION AND RECOMMENDATION

Over last decade, Rwanda's government made significant progress in tackling poverty and hunger. Poverty has fallen, but needs to fall faster to meet the MDG and Vision 2020 targets. Despite the significant progress the Country made towards the attainment of the MDGs, a renewed emphasis on sustaining progress and positive trends in poverty eradication and health is essential if the Goals are to be achieved. Achieving poverty reduction objective requires a focus on decreasing population growth rate, increasing rural income and agriculture output. Although the knowledge of contraceptive methods is high, the use of contraception is still low and the wishes of younger women to drop the fertility should be unrealized. The Government should continue the campaign for birth control and three children per family policy and currently a new policy of sterilizing (voluntary vasectomies) the poor (men who cannot pay bills for their children's upkeep) to pave for development should be encouraged. The Government should also attach high priority to measures aimed at addressing land use and other structural problems that hinder agricultural development which is the basic economic activity of the majority of Rwandan population. This should be attained by strengthening existing local institutions like farmer cooperatives, improving agricultural production technology, diversifying household income sources by availing opportunities for job creation in rural areas. The main challenge, however, will be to maintain high and broad-based economic growth and reduce persistent poverty, while pursuing macroeconomic stability and debt sustainability.

The further research will be to assess the link between family planning and poverty level among those who use family planning methods and those who do not use.

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