CHAPTER FOUR

RESPONDENTS' PROFILES

This chapter provides a descriptive summary of the background characteristics of respondents sampled in the Rwandan Demographic and Health Survey of 2000. The characteristics examined include respectively socioeconomic factors and proximate determinants such as: education, type of place of residence, employment, age at first marriage, contraceptive use, and breastfeeding practices. These characteristics are chosen because fertility level could be determined by them.

4.1. Socioeconomic characteristics

The Table 2 summarizes the frequency and the percentage distribution of respondents by selected socioeconomic characteristics mentioned previously. The presentation of these characteristics aims to facilitate the interpretation of findings in this study.

Table 2: Percentage distribution of female Respondents by selected Socioeconomic characteristics, Rwanda 2000 DHS.

Characteristics	Frequency	Percentage
Age-groups		
15-19	2727	26.2
20-24	1942	18.6
25-29	1588	15.2
30-34	1273	12.2
35-39	1149	11.0
40-44	1015	9.7
45-49	727	7.0
Total	10421	100.0
Educational level		
No education	2837	27.2
Primary	6175	59.3
Secondary	1340	12.9
Higher	69	0.7
Total	10421	100.0
Percent currently working	7810	75.0
Type of occupation		
Agriculture	6629	82.5
Self employed trader	502	6.2
Teacher, lecturer	129	1.6
Medical, health worker	36	0.4
Artist/Artisan	87	1.1
Student	93	1.2
Domestic servant	208	2.6
Other	350	0.04
Total	8034	95.6*
Type of place of residence		
Urban	1444	18.0
Rural	6577	82.0
Total	8021	100.0

Source: Generated from 2000RDHS

*: 4.4 remaining to 100% represent missing values

Table 2 shows that the population has a young age structure as 60% of respondents represented women aged 15-29 at the time of the Survey. More than half completed primary; close to one-third had no education (27%) while 13% completed secondary education. The majority (82%) of respondents lived in rural areas; three quarters of them (75%) were working. In Rwanda, among those currently working, more than eight in ten (82.5) were employed in agriculture at the time of the survey.

4.2. Levels of Proximate determinants

Proximate determinant consist of all biological and behavioural factors through which the socioeconomic variables operate to affect fertility. In this study, only three proximate determinants are considered, namely: proportion married, use of contraceptives and breastfeeding practices. As mentioned previously, the data on abortion are not available because this practice is illegal in Rwanda. Thus, the Table 2 presents the percentage distribution of respondents by their responses to key proximate determinants of fertility.

Table 3: Percentage distribution of Respondents by their responses to key proximate determinants of fertility, 2000 RDHS

Proximate determinant of fertility	Frequency	Percentage
Marital status		
Single	3758	36.1
Currently married	4891	46.9
Formerly married	1772	17.0
Total	10421	100.0
Mean Age at first marriage		19.9
Contraceptive use		
% not using any method	9567	91.8
% using any modern method	406	3.9
% using any folkloric method	3	0
% using any traditional method	445	4.3
Total	10421	100.0
Knowledge of contraception	9639	92.5
% knows no method	348	4.3
% knows a modern method	7644	95.1
% knows only traditional method	42	0.5
Discussed Family Planning	476	4.6
Exposure to fertility		
Fecund	6060	58.2
Pregnant	919	8.8
Amenorrheic	2065	19.8
Infecund, menopausal	1377	13.2
Total	10421	100.0
Currently breastfeeding	3404	32.7
Mean duration of breastfeeding		15

Source: computed from RDHS

Table 3 shows that only 36% of women were single while a large proportion of them (64%) were ever married. The table reveals that the mean age at first marriage is 19.9 years (the mean has been used instead of median because the age distribution of this variable is normal). More than nine in ten women (92%) were not using contraceptive method, 95% of them said that they had not discussed family planning with their partner. Nearly six in ten of respondents (58.2 %) were fecund and about one-third of them were breastfeeding. The mean duration of breastfeeding in Rwanda is 15 months while according to 2000 RDHS; the median duration of breastfeeding is 32 months. As one can see, there is a big difference between values of the mean and the median duration of breastfeeding because the mean does not take account the outliers in the distribution which are 0 and 70.

Acsadi (1990) has reported that, all variation in fertility is attributable to variation in one or more of the proximate variables. According to the findings in Table 2, the age at first marriage of respondents is early and consequently the exposure to childbearing is high. In addition, the use of contraceptive method in Rwanda is almost nonexistent and it is known that it is very difficult to achieve low levels of fertility without using some form of modern fertility control.

4.3. Fertility level

Various indices are used to measure the fertility of a population. The measures that are utilized here include age at first birth, Children Ever Born (CEB), Completed family size (age-group 35-49), Total Fertility Rate (TFR), and birth interval. Fertility measures are based on data collected in the reproductive section of the DHS questionnaire. In the questionnaire, each woman was asked about the number of sons and daughters living with her, the number living elsewhere, and the number who had died. A completed birth history was also collected, including the sex, date of birth,

and survival status for each live birth (Muhuri et al, 1994). Among these fertility measures, the TFR is widely used because it adjusts for differences due to age distributions.

4.3.1. Children Ever Born and Completed family size (35-49)

The number of children ever born at various ages of the mother provides one measure of a population's fertility. It shows how many children a certain cohort of women who have completed childbearing actually produced during their childbearing years. The completed family size (35-49) represents the childbearing experience of a real age cohort and reflects both current and past fertility behaviour (Kane et al, 2004).

The Table 4 indicates the percentage distribution of all women and currently married women by number of children ever born, the Mean Number of Children Ever Born (MNCEB) and the mean number of children surviving.

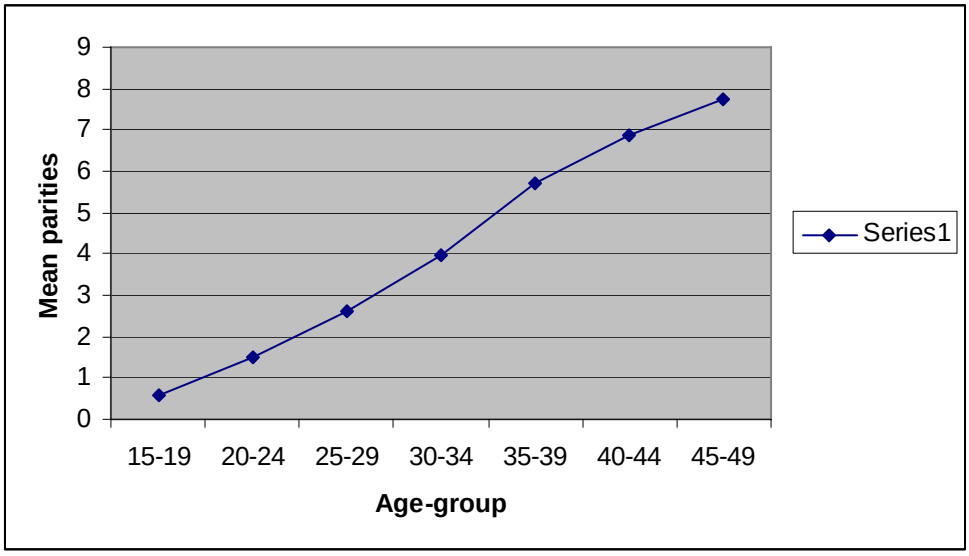
Table 4: Percent distribution of all women and currently married women by number of children ever born and MNCEB, 2000 RDHS

	Number of children ever born											MNCEB	Mean number of Children surviving
Age-group	0	1	2	3	4	5	6	7	8	9	10+		
ALL WOMEN (N=10421)													
15-19	95.3	4.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.048
20-24	47.3	27.1	18.1	6.3	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.91	0.75
25-29	15.0.	17.3	25.9	24.4	12.6	4.2	1.4	0.1	0.0	0.0	0.0	2.23	1.82
30-34	5.8	6.6	14.1	20.6	21.9	18.0	9.2	3.6	1.6	0.4	0.0	3.69	2.94
35-39	2.2	4.2	4.4	10.9	13.5	18.6	18.3	13.4	9.4	4.3	2.3	5.30	4.13
40-44	1.6	3.1	4.6	4.9	7.1	14.0	13.9	18.4	14.5	10.8	8.5	6.41	4.92
45-49	1.4	1.0	1.7	2.9	4.8	10.5	11.0	16.0	18.7	13.3	19.1	7.36	5.33
Total	37.3	10.4	10.2	9.3	7.3	6.8	5.4	5.2	4.3	2.6	2.6	2.78	2.15
CURRENTLY MARRIED WOMEN (N=4891)													
15-19	49.1	44.2	6.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.58	0.48
20-24	15.0	39.5	31.6	11.8	1.5	0.5	0.1	0.0	0.0	0.0	0.0	1.49	1.26
25-29	5.4	14.3	27.9	29.8	15.9	5.3	1.8	0.1	0.0	0.0	0.0	2.61	2.15
30-34	2.2	4.4	12.0	20.8	23.0	20.5	10.2	4.4	1.8	0.5	0.0	3.96	3.23
35-39	1.0	3.4	2.6	8.7	10.5	16.3	21.1	16.0	11.0	6.0	3.1	5.71	4.48
40-44	1.1	2.0	2.9	3.4	6.0	11.5	12.5	19.1	18.5	12.5	10.7	6.85	5.36
45-49	1.2	0.8	0.9	1.7	3.4	9.2	9.3	14.8	20.0	15.5	23.1	7.73	5.78
Total	6.5	14.1	15.8	15.0	10.7	9.6	7.8	7.1	6.1	4.1	3.8	4.06	3.21

Source: Computed from 2000RDHS

The percentage distribution of children ever born by age and the graph below show that the Mean Number of Children Ever Born increases monotonically with age and reach a maximum among women aged 45 to 49.

Figure 4: Mean Parities for Rwanda 2000



The Table 4 reveals that Rwandan women in 2000 started their childbearing relatively later because 95% of women aged 15-19 have never given birth. Nevertheless, this proportion declines from 45% for women aged 20-24 to 1.3 among women aged 40-44. The minor proportion of women who never give birth at the end of their childbearing explain the universality of marriage in Rwanda.

More than half (51%) of currently married women aged 15-19 have started their childbearing and the number of children reported was higher than that of reported by all women, indicating that childbearing occurs mostly within marriage in Rwanda. In addition, in 2000 the proportion of currently married women who never give birth at the end of their childbearing was 1.3%. This indicates that in 2000, the level of primary sterility was very low in Rwanda, given that the standard level of childless (the lowest proportion) of ever married women ending their reproductive years childless is 3 %(Bongaats, 1984).

The completed family size (35-49) for currently married women was 6.7 children per women in Rwanda. As this measure gives cohort information, in this study we need also a measure which can give a synthetic approach such as the Total Fertility Rate (TFR).

4.3.2. Total Fertility Rate (TFR)

The TFR measures the average number of children ever born to each woman, assuming that current birth rates remain constant and that none of the women dies before reaching the end of the childbearing years(Weeks 2005). This measure has an advantage that it is not affected by the age structure of the population. To obtain information on it, women were asked a series of questions to determine the total number of live births they had in their lifetime. The 2000 RDHS provides data on birth history which allows the computation of the TFR as shown in Table 5.

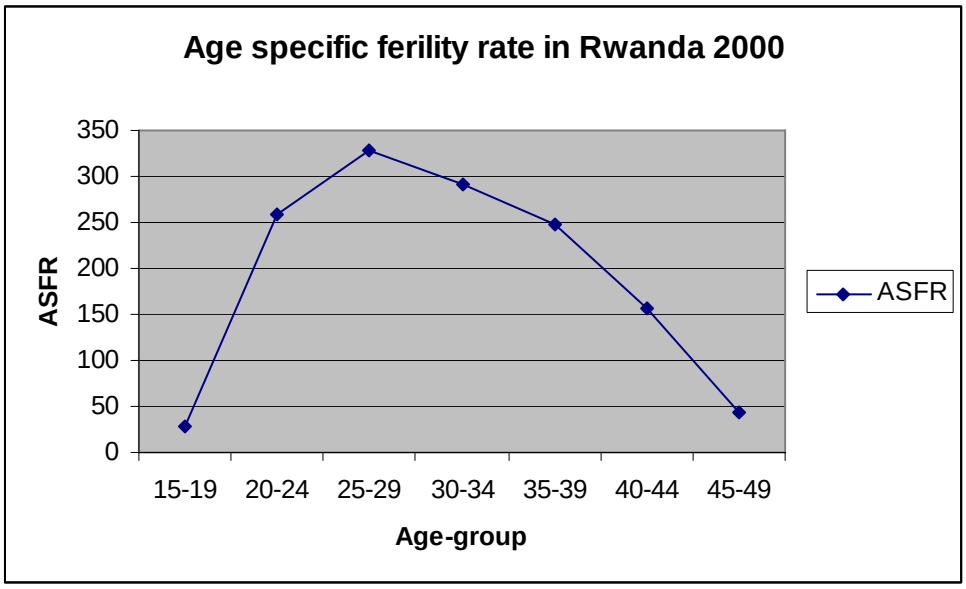
Table 5: Direct estimation of TFR

Age-groups	No female	Births in the preceding year	ASFR
15-19	2727	79	29
20-24	1942	502	258
25-29	1588	522	329
30-34	1273	371	291
35-39	1149	285	248
40-44	1015	158	156
45-49	727	31	43
Total			**1354**
TFR			$5\frac{\sum ASFR}{1000} = 6.7$

Source: computed from 2000 RDHS

The direct estimation of the TFR gives an average of 6.7, meaning that if the age-specific fertility rates continued unchanged, women in Rwanda would have an average of 6.7 children each during their childbearing years. Furthermore from the table 5, I present the figure 5 to show the age pattern of childbearing in Rwanda.

Figure 5: Age specific fertility rate in Rwanda 2000



It has been reported that direct estimates of age specific fertility rates from survey data, most often turn out to be biased. The most commonly used approach to obtain fertility rates in the context of developing countries in general and African countries in particular is the indirect measurement of fertility (Siegel and Swanson 2004). To do so, Brass developed a very useful method of comparing lifetime fertility to cumulative current fertility and the ratio of the two under the following assumptions:

i) Fertility for the population under study remained constant for sometime in the past;

ii) The reported number of children ever born to women in their early ages (15-35) is more or less accurately reported.

iii) The reported age specific fertility rates based on data on births last year (BLY) may underestimate or overestimate the level of fertility but their age structure is correctly reported *(ibid*).

The Table 6 presents the Brass P/F Ratio Method of estimating fertility in Rwanda. Using Brass technique, the following steps are shown below and details of computation are given in the Appendix A.

Step 1: The column (4) gives the values of cumulative fertility.

Step 2: The column (6) presents values of the cumulated fertility schedule for a period denoted $\Phi(i) = 5\Sigma f_s$ **for s = 1 to** $i - 1$. Brass assumes that births can not occur 6 months before and therefore there is no cumulated fertility for the age-group 15-19.

Step 3: The column (7) gives the values of the correction factor (k). To compute this factor, Brass multipliers and interpolating factors were used.

Step 4: The column (8) shows values from calculating a fertility schedule for conventional five-year age groups using the equation: $F(i) = \emptyset + kifi$

Step 5: The column (9) presents values of adjustment of P/F ratio using the equation P(i)/F(i).

Step 6: Finally, the column (10) gives the values of $P_2/F_2 \times f_i$ which is recommended as an adjusting factor because the assumption of the Brass method stipulate that the women in the age-group 20-24 are less likely to experience a fertility decline than the women in older age. In addition, the women aged 20-24 remember the number of children born by them.

Table 6: Brass P/F Ratio Method of estimating Fertility in Rwanda

Age Group (1)	Age interval (2)	BLY f_i (3)	Cum fertility cf_i (4)	MNCEB P_i (5)	$\emptyset = 5cf_i$ (6)	k_i (7)	F_i (8)	P_i/F_i (9)	$P_2/F_2 x f_i$ (10)
15-19	17	0.029	0.029	0.0513	-	1.308	0.038	1.351	0.030
20-24	22	0.258	0.287	0.871	0.14	2.689	0.840	1.038	0.268
25-29	27	0.329	0.616	2.192	1.44	2.960	2.410	0.910	0.341
30-34	32	0.291	0.907	3.610	1.89	3.137	2.813	1.283	0.303
35-39	37	0.248	1.155	5.222	4.54	3.180	5.327	0.980	0.257
40-44	42	0.156	1.311	6.290	5.78	3.356	6.301	0.998	0.162
45-49	47	0.043	1.354	7.160	6.56	3.796	6.718	1.066	0.044
Total		1.354							1.405
TFR		6.7							**7.025**

Source: computed from 2000 RDHS

The Brass method assumes constant fertility whereas the Arriaga version does not. The latter, modified the P/F approach by extending it to a case of changing fertility (this is the case for Rwanda) rather than transforming the recorded age specific fertility figures to children ever born types figures(Ngalinda, 1998).

Using MORTPARK software (see Appendix B), the Arriaga approach gave three estimations of TFR as follows: 5.047, 5.646 and 5.347 for respectively age-groups 20-25, 25-30 and 30-35. Given that in Rwanda fertility starts to decline from the age-group 25-29, the value of this particular age is considered (TFR= **5.65 or 5.7**). In this study the Arriaga's estimates are considered (5.7) as it takes account the case of changing fertility.

4.4. Birth interval

As a determinant of fertility, the birth interval is also a good measure of fertility level because the shorter the average interval between births, the greater the number of births that can be squeezed into the childbearing span, and vice versa. The birth interval can be measured by asking women the date of birth of the preceding live birth and the date of the actual birth. To provide information on birth spacing in Rwanda, Table 7 presents the percentage distribution of births in the five years preceding the survey by number of months since preceding birth.

Table 7: Percent distribution of births in the five years preceding the survey by number of months since preceding birth (2000 RDHS)

	Months since preceding birth					Median number of months since preceding birth
Age-groups	7-17	18-23	24-35	36-47	48+	
20-29	13.6	18.5	39.3	18.7	9.9	28.6
30-39	8.2	12.2	36.8	23.4	19.4	33.5
40-49	6.6	8.2	30.2	24.2	30.7	37.9

Source: Computed from 2000RDHS
Note: births for women aged 15-19(first births) are omitted from the table because there is no prior birth with which to measure an interval.

The above Table shows that in 2000, the average length of birth interval among Rwandan women of childbearing age was relatively long (beyond 24 months). It is also shown that the median birth interval increases with age. Indeed, the median birth interval increases from 28.6 months for births to women aged 20-29 to 37.9 months for births to women aged 40-49.

4.5. Age at first birth

The age at first birth is of great importance in family formation and therefore can influence fertility mostly where marriage is universal. Generally, early age at birth leads to a larger family size. In addition, the greater the median age at first birth, the lower fertility level. To illustrate fertility behavior in Rwanda, Table 8 presents the percentage distribution of women who gave birth by exact ages and the median age at first birth by current age.

Table 8: Percentage distribution of women who gave birth by exact ages and median age at first birth by current age (2000 RDHS)

	Percentage who gave birth by exact age						Median age at first birth
Current age	% childless	15	18	20	22	25+	
15-19	95.2	2.5	2.1	NA	NA	NA	A
20-24	45.1	8.1	21.7	17.1	6.9	NA	A
25-29	13.8	8.7	18.0	23.2	28.5	7.3	22.0
30-34	5.4	8.9	16.4	21.8	28.0	18.8	22.2
35-39	2.4	7.7	19.6	24.6	26.6	18.7	21.8
40-44	1.3	9.8	15.7	23.1	28.1	21.4	22.1
45-49	1.5	8.7	20.5	20.4	26.1	21.9	22.0

Source: 2000RDHS

NA: not applicable;
A: omitted because less than 50% of women had a birth before reaching the beginning of the age-group.

The Table 8 indicates that there is no remarkable variation of the median age at first birth within all women's generations. For all age-groups, the median age at first birth varies between the minimum of 21.8 years and the maximum of 22 years. However the majority (28.5%) of women for whom the median age at first birth is 22 years (maximum) are found among the young age-groups, suggesting that young women are postponing their childbearing.

4.6. Fertility differentials

In this section fertility differences by selected background characteristics are illustrated in the table below. Four measures of current fertility are used here such as: TFR, the percentage of women currently pregnant, the Mean Number of Children Ever Born and the median birth interval.

Table 9: Fertility levels by selected background characteristics

Background characteristics	TFR	% currently pregnant	[2]MNCEB for women aged 35-49	Median birth interval
Residence				
Urban	5.2	22.7	5.7	29.5
Rural	5.9	77.3	6.9	32.7
Province				
Butare	4.9	7.0	6.2	35.6
Byumba	6.5	10.8	7.1	31.6
Cyangugu	6.3	8.1	7.0	31.7
Gikongoro	5.9	9.8	6.6	32.4
Gisenyi	6.7	12.1	7.2	31.4
Gitarama	4.9	7.3	6.6	34.7
Kibungo	5.4	9.5	6.9	32.4
Kibuye	6.0	11.1	7.1	32.6
Kigali Ville	4.9	7.7	5.6	29.3
Kigali Rural	5.5	6.6	6.9	32.2
Ruhengeri	6.7	10.6	7.0	32.0
Umutara	6.2	9.9	7.1	31.1
Education				
No education	6.1	9.3	7.1	33.8
Primary	5.9	9.0	6.8	31.9
Secondary and higher	4.9	9.0	4.6	30.2
Currently working				
No	7.6	18.5	7.8	29.4
Yes	6.8	81.5	7.3	32.2
Marital status				
Never married	1.1	2	2.4	30.6
Ever married	7.1	98	8.2	31.8

Source: Computed from 2000RDHS

Note: the percentage currently pregnant may not capture all pregnant women since some women may be unaware of their pregnancy.

It is apparent from the table 9 that fertility varies by type of place of residence, from a high of 5.9 births in rural areas to a low of 5.2 births in urban areas. Regional variations in fertility are also marked, ranging from a maximum of 6.7 children per woman in Gisenyi and Ruhengeri Provinces to a minimum of 4.9 children per woman in Butare and Gitarama Provinces. The table indicates that the TFR is negatively

[2] : MNCEB: Mean number of children ever born

related to the level of education. Indeed, women with no education have the highest level of fertility with 6.1 births, while the most educated (secondary and higher) have the lowest level with 4.9 births. The same trend is observed among working and ever married women.

Current pregnancy is lowest among women living in Kigali rural and Butare Provinces. The percentage of currently pregnant is higher in rural areas than in urban areas. The table reveals that the proportion of currently pregnant does not appear to vary between educational levels while among working and ever married women the proportion is very high. The Table shows differentials in the mean number of children ever born to women aged 35-49. A comparison of the TFR and completed family size indicates that there has been a decrease in fertility over time among women in all groups except among women with secondary and higher educational level.

The Table shows that the selected characteristics have profound effects on the variation of the length of the birth interval. Urban women have a short birth interval (29.5 months) compared to their rural counterparts (32.7). Across regions, the median birth interval ranges from a low of 29.3 months in Kigali-ville to a high of 35.6 months in Butare. The median birth interval is longer among women with no education (33.8 months) than that of the highly educated women (30.2 months). It is also negatively related to working status and marital status among women under study. For further information on fertility behaviour in Rwanda, Table 10 presents the median age at first birth by current age and background characteristics.

Table 10: Median age at first birth by current age and background characteristics

	Current age					Age
Characteristics	25-29	30-34	35-39	40-44	45-49	25-49
Residence						
Urban	22	23	21.8	22.7	22.7	22.3
Rural	22	22.1	21.8	22.0	21.9	22.0
Region						
Butare	22.9	23.8	22.7	23.1	22.7	23.0
Byumba	21.2	21.5	21.6	22.0	21.1	21.4
Cyangugu	22.1	21.4	21.6	21.3	21.3	21.6
Gikongoro	22.3	22.7	22.4	22.9	23.2	22.6
Gisenyi	21.4	21.3	22.1	22.3	21.7	21.8
Gitarama	23.0	23.1	22.1	21.6	21.6	22.3
Kibungo	21.9	22.2	21.3	21.8	21.3	21.7
Kibuye	21.5	22.0	21.9	21.4	21.7	21.7
Kigali ville	22.7	23.5	22.3	23.1	21.5	22.8
Kigali rural	22.4	22.6	21.9	21.5	21.6	22.1
Ruhengeri	20.8	21.3	21.5	22.6	22.8	21.5
Umutara	21.4	21.1	20.8	20.8	22.8	21.3
Educational level						
No education	20.7	21.2	21.2	21.8	22.0	21.5
Primary	22.0	22.2	21.9	21.9	21.7	22.0
Secondary +	22.9	24.4	24.1	23.7	24.4	23.5
Total	**22.0**	**22.2**	**21.8**	**22.1**	**22.0**	**22.0**

Source: 2000 RDHS

The Table 10 shows that there is a minor difference of median age at first birth among women aged 25-49 by residence, with 22.3 years in urban and 22.0 years in rural area. With regard to region, it appears that Butare and Kigali ville have the highest median age at first birth, with respectively 23 and 22.8 years; while Umutara and Byumba provinces have the lowest median age at first birth with respectively 21.3 and 21.4 years.

Moreover, it is shown that the median age at first birth increases with the increase of the educational level of women: 21.5 years for women with no education, 22.0 years for women with primary educational level, and 23.5 years for women with secondary and higher educational level. For further understanding of the respondents' fertility behaviour, Table 11 presents the knowledge and practice of contraceptive use by background characteristics.

Table 11: Knowledge and contraceptive use by background characteristics, 2000 RDHS

Characteristics	Knowledge of any modern method(%)	Current use of modern method (%)
Age-group		
15-19	86.9	0.7
20-24	95.8	4.3
25-29	97.0	5.9
30-34	97.3	5.6
35-39	97.4	6.0
40-44	97.4	4.7
45-49	96.0	3.2
Total	94.2	3.9
Residence		
Urban	95.1	8.4
Rural	93.9	2.3
Region		
Butare	96.3	2.3
Byumba	91.9	3.6
Cyangugu	95.9	3.4
Gikongoro	93.3	2.0
Gisenyi	95.8	3.7
Gitarama	96.9	2.7
Kibungo	91.7	4.2
Kibuye	92.8	1.4
Kigali ville	94	8.7
Kigali rural	93.2	4.4
Ruhengeri	92.5	2.3
Umutara	96.9	2.1
Total	94.2	3.9
Educational level		
No education	93.3	2.5
Primary	93.6	2.9
Secondary	98.8	11.2
Higher	98.6	14.5
Marital status		
Never married	89.2	1.1
Married	97.4	7.3
Living together	96.2	5.5
Widowed	97.1	2.1
Divorced	97.8	2.2
Not living together	97.1	2.6
Total	94.2	3.9

Source: Computed from 2000 RDHS

Table 11 indicates that in general, knowledge of contraceptive methods is very high in Rwanda. It also shows that this knowledge increases with the age from 86.9 to 97.4 percent respectively for the age group 15-19 and 40-44. The knowledge of contraceptive methods by residence is not quite different between rural (93.9 percent) and urban (95.1 percent) areas. With regard to the knowledge of contraceptive methods by region, Table 11 reveals that more than 90 percent of women in all provinces know at least one contraceptive method. Gitarama and Umutara provinces come at the first position with 96.9 per cent. The knowledge of contraceptive is also associated with educational level and marital status. The knowledge increase with educational level (from 93.3 to 98.6 percent) and becomes high among ever married women compared to never married.

Nevertheless, the use of contraceptive methods is critically low in Rwanda (3.9 percent).The main reasons behind such a situation are that in Rwanda children are economic assets for farm work, wood and water collection, and social security for old parents. Moreover, potential users of family planning services in rural areas could barely afford to buy contraceptives. Should a social marketing approach be adopted, because in a subsistence economy very little money circulates in rural areas. Finally, the fear of side effects exists alongside an awareness that proper care will be difficult to obtain if complications occur.

It is shown that the use of modern methods can increase in urban areas, by increasing educational level and for married women.

4.7 .Proximate determinants by selected socioeconomic characteristics

In fertility study, a distinction is made between proximate and socioeconomic determinants. The principal characteristic of a proximate determinant is its direct

influence on fertility while socioeconomic variables affect fertility only indirectly by modifying the proximate determinants. Using a bivariate analysis to test the relationship between determinants of fertility, Table 12 presents the chi-square (χ^2) and the P- Value of the relationship. As it is apparent from the table below, the relationship among all proximate and socioeconomic determinants of interest in this study, is significant (pv< 0.05)

Table 12: Relationship between determinants of fertility (2000RDHS)

	Proximate variables		
	Age at first marriage	Contraceptive practice	Duration of breastfeeding
Socioeconomic variables	Chi-Square tests (χ^2 ; pv.)		
Women's education	(505.183; .000)	(26.801; .000)	(219.386; .017)
Husband's education	(1137.992; .000)	(39.346;.004)	1333.282;.001)
Women's employment	(1292.557; .000)	(58.836; .000)	(1053.833;.000)
Type of place of residence	(64.219; .000)	(26.239;.000)	(209.864;.000)

Source: Computed from 2000RDHS

It is shown from the Table 12 that all the proximate variables are significantly associated with socioeconomic variables of interest in this study. Therefore, age at

first marriage is the most significantly associated with all the socioeconomic variables while breastfeeding appears to be the least associated with women's education variable. This bivariate analysis is important because it predicts the association of variables to include in the different models.