CHAPTER FOUR

RESPONDENTS PROFILE AND FRTILITY LEVELS.

4.1 Introduction.

This chapter gives a profile of the respondents by selected socioeconomic characteristics and the estimates of fertility in informal settlements. The first section presents frequency distribution of the relevant demographic and socio-economic variables of the respondents. The second section presents estimates of fertility in informal settlements and in South Africa as a whole.

4.2 Socioeconomic Background of respondents

Table 4.1 presents descriptive summary of selected socio-economic variables of women in the reproductive age in South African informal settlements. Informal settlements in South Africa are characterized by an old age structure, with a higher proportion of women at older ages. In fact, about 70 % of women in informal settlements are above 30 years, against about 30 percent in young age group. A high percentage of women were never married (about 57%) and most of the women in South Africa's informal settlements are of Christian (71%). About half of informal settler women had secondary education, with only about 2 percent possessing higher education. Major differences can be seen in the distribution of population groups and in the employment status of respondents. Nearly all women in informal settlements were blacks (97.6 %) and about 57 % of women were unemployed. In addition, nearly all women in informal settlements have low income (99%) with only about 1 % or 227 women having higher income. In terms of household ownership of radio, five in ten of informal settler's women lived in households with a radio, while only one-third of informal settler's women had a television in their homes.

Table 4.1: Percentage Distribution of respondents in South African informal settlements.

Background Characteristics	Frequency	Percentage (%)
Age group		
15 – 19	639	2.7
20 – 24	2,320	9.7
25 – 29	4,242	17.7
30 – 34	4,702	19.7
35 – 39	4,854	20.3
40 – 44	3,918	16.4
45 – 49	3,235	13.5
Total	23,910	100
Marital status		
Married	4,267	17.9
Living together	3,253	13.6
Never married	13,535	56.6
Widow, Separate & Divorced	2,855	11.9
Total	23,910	100
Race		
Black /African	23,346	97.6
Coloured	507	2.1
Indians /Asia	34	0.1
White	23	0.1
Total	23,910	100
Religion		
Christian	17,003	71.1
African Traditionalist	2,782	11.6
Non Christian	231	1
No religion	3,894	16.3
Total	23,910	100
Highest level of education		
No schooling	3,590	15.0
Primary	7,530	31.5
Secondary	12,360	51.7
Higher	430	1.8
Total	23,910	100
Employment Status		
Employed	8,126	43.4
Unemployed	10,591	56.6
Total	18,717	100

Table 4.1 Continued		
Income		
Low income	23,683	99,10
Higher income	227	0.90
Total	23,910	100
Wealth index		
% own Radio	12,507	52.3
% own TV	6,803	28.5

Note: No response was excluded from employment status.
Source: Computed from the 10 % South Africa 2001 Census data.

4.3 Fertility levels in South African informal settlements**.**

4.3.1 Direct Methods of Fertility Estimation.

Different fertility measures including crude birth rate (CBR), General fertility rate (GFR), and total fertility rate (TFR) may be calculated using either direct or indirect methods. In this study, the focus is on the total fertility rate (TFR) defined as the number of children a woman would have by the end of her child bearing years if she were to pass through those years bearing children at the observed age specific fertility rates. This measure has an advantage that it is not affected by the age structure of the population. To calculate the TFR, one needs to first obtain Age Specific Fertility rate for each age group. The ASFR for each age group is obtained by dividing the number of births occurring to women in different age groups during the year preceding South Africa 2001 Census, by the total number of women. The TFR is then calculated by summing the age–specific fertility rates for the seven five year-age groups and multiplying the figure by 5. In addition, mean number of children ever born (MNCEB) is used in the analysis. The average number of children ever born is obtained by dividing the number of reported children by the number of women in each age group.

Table 4.2 shows the mean numbers of children ever born (MNCEB) , age specific fertility rate (ASFR) and the Total Fertility Rate (TFR) for women in informal settlement as calculated from the 10 percent SA 2001 Census data.

Table 4.2 Mean numbers of Children ever born and Age Specific fertility rates by age group of women

Age group	Informal settlements		NATIONAL
	MNCEB	ASFR	ASFR[1]
15 – 19	0.3975	0.10	0.074
20 – 24	0.9668	0.13	0.128
25 – 29	1.5519	0.11	0.132
30 – 34	2.2065	0.10	0.110
35 – 39	2.8671	0.07	0.072
40 – 44	3.3244	0.03	0.033
45 – 49	3.6068	0.02	0.012
	TFR	**2.8**	**2.80**

Source: Calculated from the 10 % South Africa 2001 Census data

(1) Extract from Moultrie & Dorrington, 2004:44

As can be observed from table 4.2 above, the TFR for informal settlements was estimated to about 2.8 meaning that a woman in the informal settlements would have an average of 3 children during her childbearing years. This figure is the same with the national level as estimated by Moultrie & Dorrington. In fact a direct estimate of fertility in South Africa as a whole in 2001 suggests an overall level of fertility   of 2.8 children per woman, as indicated in the table 4.2 above.

In developing countries however, information on children ever born and birth during the year preceding surveys or Census are frequently distorted, by error (UN, 1983). Data on children ever born (especially for older women) may be distorted due to the omission of long dead children and children who have left their parental homes. In others words, average parities computed from data on children ever born can be distorted either by errors in reporting or errors of misplacing women out of their age group. On the other hand, information on currently fertility from questionnaire on births occurring during the year preceding the survey or census may be

distorted by misperception of the length of the reference period. Therefore the reported births correspond to an ill-defined period whose average length may be either shorter or longer (UN, 1983: 31). To overcome this shortcoming, indirect method of fertility is then a useful approach of fertility estimation.

4.3.2 Indirect Methods of Fertility Estimation.

Several indirect methods of fertility estimation have been developed in order to minimize distortion of data on children ever born and age specific rate in developing countries. These include among others P/F ratio Methods (Brass P/F Ratio Method, Coale and Trussel method and Brass Relational Gompertz Model) and Arraiga's Approach (UN, 1983).

4.3.2.1 Estimation of Fertility Using P / F Ratio.

Tables 4.4 below show the results of application of the P / F Ratio to the fertility data considered in this study (See Appendix for computation' steps where necessary).

Table 4.3: BRASS P/F Ratio method of adjusting current fertility estimated SA informal settlements.

Age group	Parity Pi	ASFR fi	Cumulated fertility cfi	Ø=5cfi	Multiplier Ki	Ki *fi	Fi= Ø+Kifi	Pi / Fi	Adjusted rate P2/F2*f
15-19	0.3974	0.1049	0.1049	-	3.023	0.3171	0.3171	1.2532	0.1129
20-24	0.9668	0.1259	0.2308	0.5245	2.970	0.3739	0.8984	1.0761	0.1355
25-29	1.5519	0.1129	0.3437	1.1540	3.083	0.3481	1.5021	1.0332	0.1215
30-34	2.2065	0.0963	0.4400	1.7185	3.1403	0.3024	2.0209	1.0918	0.1036
35-39	2.8671	0.0729	0.5129	2.200	3.2854	0.2395	2.4395	1.1753	0.0785
40-44	3.3244	0.0339	0.5468	2.5645	3.6113	0.1224	2.6869	1.2373	0.0365
45-49	3.6068	0.0173	0.5641	2.7340	4.6321	0.0801	2.8141	1.2817	0.0186
Total		**0.5641**							**0.6071**
TFR				**2.8208**					**3.036**

Source: Computed from the 2001 South Africa Census.

From the table 4.4, one can see that Pi/Fi values are decreasing from the beginning and start increasing at old age groups. This suggests some misreporting of births. In addition, Pi/Fi values are greater than one, which suggest a higher proportion of birth reported in the data set. P2/F2 rate has been then used for the purpose of adjustment.

TFR estimated using P2/F2 as an adjustment factor was around 3.0, meaning that a woman in the informal settlement would have an average of 3 children during her childbearing years. Adjusted Pi/Fi values are suggesting some consistency in the reporting of lifetime fertility. In fact, the ratios for younger women are increaseing from age 15 to 24 and started to decrease in the middle age groups up to the old ages groups (25-49).

4.3.2.2. Estimation of Fertility using Coale-Trussel variant.

Table 4.5 estimate fertility in South Africa informal settlement using the Coale Trussell variant. The same trend of Pi/Fi values increasing at old age groups is also observed from the Pi/Fi values, suggesting some misreporting of births; P2/F2 rate has also been used as adjustment factors.

The adjusted TFR using P2/F2 as adjustment factor was also estimated as 3.0

Table 4.4: Coale-Trussel method of estimating fertility, SA informal settlements

Age group	Parity Pi	ASFR fi	Cumulated fertility cfi	Ø=5cfi	Estimated parity equivalent (Fi)	P/ F ratio (Pi / Fi)	K=P2/F2
15-19	0.3974	0.1049	0.1049	0.5245	0.2486	1.599	0.1123
20-24	0.9668	0.1259	0.2308	1.154	0.9029	1.071	0.1348
25-29	1.5519	0.1129	0.3437	1.7185	1.5031	1.033	0.1209
30-34	2.2065	0.0963	0.44	2.2	2.0171	1.094	0.1031
35-39	2.8671	0.0729	0.5129	2.5645	2.4323	1.179	0.0781
40-44	3.3244	0.0339	0.5468	2.734	2.6522	1.253	0.0361
45-49	3.6068	0.0173	0.5641	2.8205	2.8002	1.288	0.0185
Total		0.5641					0.6039
TFR		**2.8205**					**3.0195**

Source: *Computed from the 2001 South Africa Census*

4.3.2.3 Estimation of Fertility using Brass Relational Gomperts Model.

The application of Brass Relational Gompertz Model of estimating fertility (Table 4.6), gave a TFR of 2.81 for SA informal settlements.

Table 4.5: Application of Brass Relational Gompertz Model of estimating fertility, SA informal Settlements.

A. Reported Fertility Data		
	ASFR	CEB
Age	f(x)	P(i)
15-19	0.104	0.397
20-24	0.126	0.967
25-29	0.113	1.552
30-34	0.096	2.207
35-39	0.073	2.867
40-44	0.034	3.324
45-49	0.017	3.607
TFR	**2.8162**	

Source: Computed from the 2001 South Africa Census, using PAS software

4.3.2.4 Estimation of Fertility using the Arriaga Method.

Using MORTPARK software, Arriaga's method, adjusted for age group 25-30 estimated

informal settlements TFR to about 3 children per woman.

Table 4.6 Arriaga's Approach for estimating fertility, SA informal settlements, 2001 Census.

Age Group of Woman	Children Ever Born	Age Specific Fertility Pattern (A.S.F.P.)	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date Recorded	Fertility Pattern by Age at Birth of Child Calculated	Cumulation of A.S.F.R.	Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	30 - 35
15 - 20	0.3975	0.1	0.1569586	0.1	0.1153363	0.1569586	0.1153363	1.3608776	0.1156849	0.124783	0.1202339
20 - 25	0.9668	0.13	8.53E-02	0.13	0.1262389	0.2423053	0.2415751	1.0030223	0.1266204	0.1365786	0.1315995
25 - 30	1.5519	0.11	0.1371187	0.11	0.1091245	0.379424	0.3506996	1.0819058	0.1094543	0.1180624	0.1137584
30 - 35	2.2065	0.1	0.1247337	0.1	9.79E-02	0.5041576	0.4485682	1.1239263	9.82E-02	0.1058846	0.1020245
35 - 40	2.8671	0.07	0.1305105	0.07	6.64E-02	0.6346681	0.5150097	1.2323421	6.66E-02	7.19E-02	6.93E-02
40 - 45	3.3244	0.03	7.84E-02	0.03	2.81E-02	0.7130251	0.5430691	1.3129546	2.81E-02	3.04E-02	2.93E-02
45 - 50	3.6068	0.02	2.87E-02	0.02	1.69E-02	0.7417012	0.56	1.3244665	1.70E-02	1.83E-02	1.76E-02
Mean Age of Childbearing:			27.151039		25.703179						
Total Fertility Rate:			3.7085061		2.8				2.8084625	3.0293363	2.9188994

Source: Computed from the 2001 South Africa Census, using UN MORTPARK software.

4.3.3 Summary of the Results.

Table 4.8 presents a summary of the computation of fertility in informal settlements by different methods of computation.

Table 4.7 Total Fertility Rate obtained from different estimation methods.

Method	Total Fertility Rate (TFR).
Direct method	2.8
Indirect methods : * Brass P/F ratio technique	3.0
* Coal & Trussel variant	3.0
* Relational Gompertz	2.8
* Arriaga technique	2.8

From the table 4.8, it is clear that fertility transition is underway in South African informal settlement with a TFR of about 3 children per woman. In fact, the four methods yield almost the same level of fertility in South Africa informal settlements, which is closed to the national estimation of 2.87 after adjustment, as indicated in the table 4.8 below.

Table 4.8: Estimation of fertility in South Africa, Census 2001.

Age group	Informal settlement by method of estimation				National[1]
	Brass P / F	Coal-Trussel	RGMP	Arriagas'	
15 – 19	0.1129	0.1123	0.104	0.1157	0.066
20 – 24	0.1355	0.1348	0.126	0.1266	0.127
25 – 29	0.1215	0.1209	0.113	0.1095	0.144
30 – 34	0.1036	0.1031	0.096	0.0982	0.121
35 – 39	0.0785	0.0781	0.073	0.0666	0.076
40 – 44	0.0365	0.0361	0.034	0.0281	0.031
45 – 49	0.0186	0.0185	0.017	0.0170	0.010
TFR	**3.036**	**3.020**	**2.8**	**2.8084**	**2.875**

Source: *Computed from the 2001 South Africa Census.*
1 Extract from Moultrie & Dorrington, 2004:37.

A graphical presentation of the age specific fertility pattern from the different methods is given in figure 4.1 below.
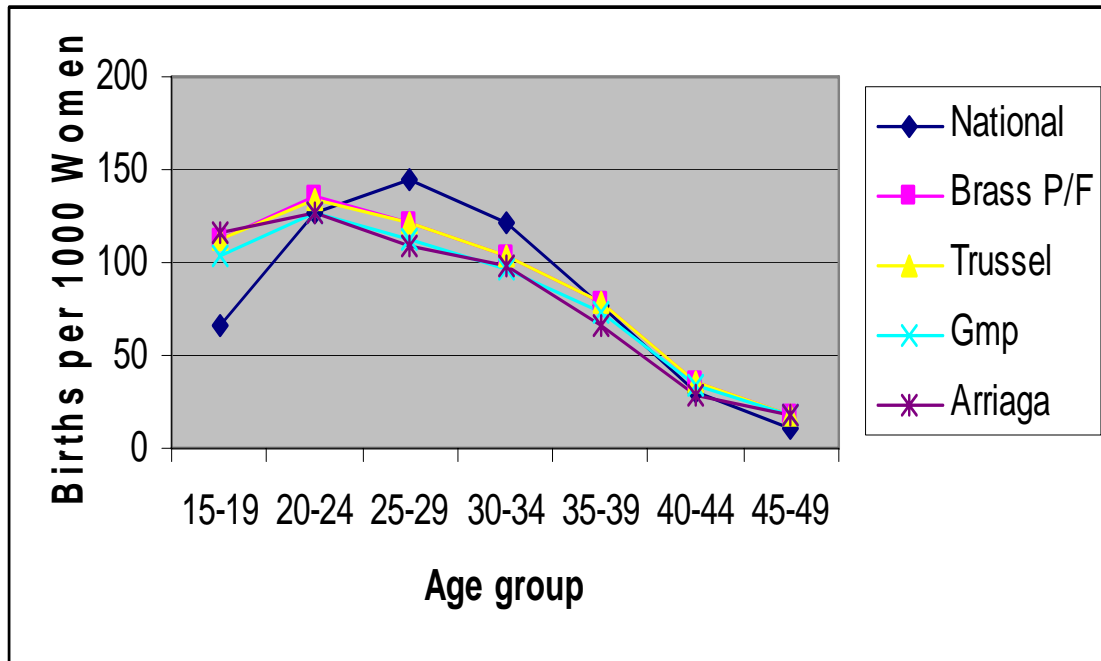
Figure 4.1: Age specific fertility rates by methods of estimation, SA Census 2001.

General speaking, even after adjustment, fertility is almost the same as the national one (Relational Gompertz and Arriaga's methods) and slightly greater than the national one (for Brass P/F ratio technique and Coale-Trussel method), when age group 20-24 is used as adjustment factor. Furthermore, adjusted fertility indicated a somewhat similar age specific, with fertility above 100 in the young age groups and then a declining pattern with age. This suggests once more, a consistency in the data on informal settlements after adjustment.

The difference between the direct and indirect method is negligible. Fertility in informal settlement is close to the national level of 2.87 as estimated by Moultrie & Dorrington (2004). Hence, contrary of our expectation, there is no major difference in the fertility level between informal settlements and the national pattern. Fertility in informal settlements is almost the same than the national. This may be as a result of the location of informal settlements (near urban areas). The proximity exposes informal settler women to the modern style of live in urban areas, which is characterized by a high level of contraceptive use.

The question one can ask at this stage is: what socio-economic factors make the difference in fertility in South Africa informal settlements? This is the focus of the next chapter.