





Cohort fertility in South Africa: Exploring fertility behaviour in birth cohorts

Statistics South Africa

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Preface

The analysis of fertility has focused more on women aged 15–49. From the policy and program's perspective, summary indicators generated from this data are useful since they describe fertility behaviour of the current periods. Nonetheless, it is crucial to compliment studies on fertility with fertility information of women who are at the end of childbearing (women aged 45–49). Analysis of this nature adds to the literature of how fertility change unfolded over time. This report used Censuses 1996, 2001, 2011 and Community Surveys 2007 and 2016 to determine the fertility behaviour of women 45–49 who were born in different periods.

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Statistician-General

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Executive summary

The analysis of this report used data from Censuses 1996, 2001, and 2011 and Community Survey 2007 and 2016. The report provides the patterns of fertility behaviour of cohorts of women aged 45–49 over time.

Across all cohorts women aged 45–49 born between 1967 and 1971 made a significant fertility transition. The average completed family size has been declining from 3,9 children for the cohort of women born between 1947 and 1951 to 2,5 children for cohort of women born between 1967 and 1971.

In each cohort of women, black African and coloured women had the highest average completed family size. Limpopo, followed by Mpumalanga and the Eastern Cape had highest average completed family sizes relative to other provinces. Over time age specific rates decreased throughout the cohorts. However, black African and coloured women had the highest age specific fertility rates within each cohort.

On average over 95% of women who were ever in a union reported to have a child whilst 83% of women who were never in a union had a child. The majority of black African and coloured women who were never in a union reported to have children relative to white and Indian/Asian women throughout all the cohorts.

Childlessness increased across all the cohorts of women. The increase was more significant in the cohort of women born between 1967 and 1971. Indian/Asian and white women appeared to be more childless than black African and coloured women across all cohorts. Throughout the cohorts, women who have not being in a union were more likely to be childless. The majority of women who were childless were daughters to the heads of the households and had attained tertiary education. These proportions were more profound in the cohort of 1967–1971.

While women who had more than six children decreased significantly from 28% in the first cohort to 8,2% in the last cohort, the family size of 2 and 3 children was evident across all cohorts. Compared to women with bigger family size (4+), the higher proportion of women with smaller family sizes had at least secondary education and were employed. Women with smaller family were more likely to be wives to the head of the household whilst women with bigger family size seemed to be heads of households.

The probability of moving from childlessness in to having one child decreased from the first cohort to the last cohort. Overall, parity progression ratios decreased with increasing parity across the cohorts.

1

Chapter 1: Background and methodology

1.1 Overview

In the Southern African region, the most notable countries where the fertility transition was evident were Zimbabwe, Lesotho, Botswana and South Africa (Potts and Marks, 2001). Within South Africa, Moultrie and Timaeus (2003) noted that the transition among the black African population was underway by the 1960s. However the most significant shift began in the 1980s as South African's intense family planning was rolled out. Studies have revealed that the fertility transition in sub-Saharan Africa follows a different pattern from the one observed in other regions of the world (Bongaarts 2013, 2017; Bongaarts and Casterline, 2013). A study by Moultrie et al. (2012) that investigated birth intervals, postponement, and fertility decline in Africa indicated that women in sub-Saharan Africa have been spacing more and more of their births, suggesting that the fertility decline in the region is driven by the postponement of childbearing at higher parities rather than by stopping behaviours (Moultrie et al., 2012).

The declining fertility is again reflected in the falling age specific fertility rates (Moultrie and Dorrington, 2004). A comparative study that examined fertility trends for thirty sub-Saharan African countries using Demographic and Health Surveys (DHS) between 1986 and 2006 indicated that over the past five decades, most countries showed signs of fertility decline in the cohort measures examined (Sneeringer, 2009). Results from comparing women born between 1950 and 1959 with those born between 1960 and 1969 reveals that seventeen of the thirty countries studied show rates of fertility decline. The report indicated that in South Africa, there was a decrease in age specific fertility rates between the cohorts of 1940–1949, 1950–1959, 1960–1969 and 1970–1979 across all reproductive age groups (15–19 to 45–49).

When measuring and investigating the pattern of fertility behaviour, it is important to consider the number of children a woman had at the end of their reproductive years, as this greatly influences the total fertility rate (TFR) within a population (Kippen, 2004). The declining trend in cohort fertility for successive cohorts is supported by analysis of parity progression ratios (PPRs). These ratios contributed to the decline in fertility over the first 30 years of fertility transition in sub-Saharan Africa and the fertility dropped because of birth limitations at all parties. Amongst the countries in which this pattern was observed is South Africa, Namibia and Zambia (Sneeringer, 2009). Stats SA (2015) indicated that by 2011, 76% of women aged 45–49 have had at most two births as opposed to 86% in 1996 and 1998. By 2011, 53% of women have had three or more births, which is far lower than what it was in 1996 and 1998 (74%).

Childlessness, either voluntary or involuntary affects the levels of fertility. Increasing childlessness is one of the many shifts in demographic behaviour that has been occurring in Europe in recent decades (Siegel, 2013). Higher education among women is significantly associated with childlessness. A study that explored childlessness amongst qualified women aged 20–49 in South Africa indicates that overall women with post-higher education degrees appear to have no children than those who have diplomas and bachelors' degrees (Masebe and Ramusibudi, 2015).

Studying childbearing behaviour of cohorts of women corroborates the implementation of Sustainable Development Goals (SDGs) whose health and education targets have direct and indirect consequences on mortality and fertility trends (United Nations, 2015). The fertility behaviour of women in a population contributes to the monitoring of aspiration 1 of Agenda 2063 which envisage a continent where people will have high standard of living, quality of life, sound health and well-being (African Union Commission, 2015). Establishing the age at which women give birth complement goal 3 of National Development Plan (NDP) which advocates for the reduction of maternal, infant and child mortality (The Presidency, 2012).

This report is not the first of its kind in the study of changing patterns of fertility in South Africa. Some trends and levels that are highlighted have been extensively documented and discussed elsewhere, (Udjo, 1997; Department of Health, 1999; Garenne et al., 2007 and Stats SA, 2015) however, they were derived using all women in the reproductive ages. It is therefore important to complement the use of period fertility indicators with indicators of completed fertility by cohort. The assumption is that by applying the cohort perspective, new insights can be obtained about how the fertility change unfolded amongst women born in different periods. This analysis further examines some socio-economic attributes of the women under investigation. Amongst other indicators included in the report are average completed family size, age specific fertility rates, levels of childlessness, parity progression ratios, marital fertility, age at first birth, mean and median age at first birth.

1.2 Methodology

This analysis is from data collected from censuses 1996, 2001, 2011 and Community Surveys conducted in 2007 and 2016. The age range is restricted to women aged 45–49 years old. Women in this age range are deemed old enough to provide information on permanent childlessness and assumed to have completed their life time fertility. The following group of four cohorts were selected according to their date of birth.

- Cohort of women born between 1947 and 1951
- Cohort of women born between 1952 and 1956
- Cohort of women born between 1957 and 1961
- Cohort of women born between 1962 and 1966
- Cohort of women born between 1967 and 1971

Owing to the inconsistencies of patterns and levels observed in the cohort of 1957-1961 (Community Survey 2007) relative to other cohorts, some of the variables for this cohort were excluded in the analysis.

Average completed family size was calculated to establish the levels of life time fertility across women born at different periods. Average completed family size (average parity) was obtained by dividing the total number of children ever born to women in age group *i* by the total number of women in that age group irrespective of whether they are single, married or fertile. In general, it is computed as follows:

$$P(i) = \frac{CEB(i)}{FP(i)}$$

Where CEB(i) = the number of children ever borne by women in age group i

FP(i) = the total number of women in age group i

i =different age groups considered (15–19 to 45–49)

Age specific fertility rates were used to measure the number of births in the last twelve months prior data collection. The rate measures the annual number of births to women of a specified age group per 1 000 women in that age group.

$$ASFR_{x,x+n} = \frac{Births \ to \ women \ aged \ x,x+n \ in \ a \ stated \ period}{Number \ of \ women \ aged \ x,x+n \ in \ a \ same \ period} \times 1000$$

Where x, x+n refers to age, which cover the age range from 45-49

The parity progression ratio from parity *i* to parity *i*+1 is the proportion of the cohort who had at least *i* live births and who went on to have at least one more. Below is the computational method:

$$PPR(i, i+1) = Pi + 1/Pi$$

Where Pi + 1 = number of women at parity i+1 or more

Pi = number of women at parity i or more

Mean and median age at first birth were computed using summary statistics from Statistical Package for Social Science (SPSS).

Descriptive methods were employed to establish proportions of the level of childlessness, women who reported giving birth, women by marital status, children ever born to women and women by age at first birth.

1.3 Measurement of childlessness and marital status

1.3.1 Childlessness

It is difficult to distinguish between involuntary childlessness (e.g. infertility), intended childlessness (i.e. those who do not intend to have children), voluntary childlessness (the "childfree"), and temporary childlessness related to circumstantial or delayed childbearing, which is neither voluntary nor involuntary (Graham et al., 2013). Recent estimates of the prevalence of infertility in South Africa are difficult to obtain. This is because measuring the prevalence of infertility focuses on women who are still in their reproductive age span (women may still deliver a child before they reach their menopause), and because it requires a delineation of a period of exposure to the risk of pregnancy (Boerma and Mgalla, 2001).

The problem is compounded by the different definitions attached to these demographic concepts. For instance, in demographic terminology, primary infertility is defined as the inability to bear any children, either due to the inability to conceive or the inability to carry a pregnancy to a live birth, whilst in medical studies infertility is usually defined only as the inability to conceive. In demography, a woman is infecund to conceive after several years of exposure to the risk of pregnancy. Inability to conceive within two years of exposure to pregnancy is the epidemiological definition recommended by the World Health Organization (Rutstein and Shah, 2004). The definition used for childlessness in the analysis is as follows:

Women aged 45–49 who answered 'NO' to a question 'has the woman ever given birth to a live child even if the child died soon after birth?"

1.3.2 Marital status

To harmonise marital status variable throughout censuses and surveys and to differentiate between a group of women who have been exposed to risk of childbearing to those who have not been exposed, marital status was derived into categories "ever been in a union" and "never been in a union". Ever been in a union includes women married, cohabiting, separated, widowed and divorced at the time of interview. The "never been in a union" refers to all women who have never been married or never been in a union.

Cohabitation, also referred to as a common law marriage, living together as a married couple or a domestic partnership is not recognised as a legal relationship by South African Law. In this study, it is included in the category of ever been married because studies have shown that childbearing within cohabitation has increased throughout Europe (Sobotka and Toulemon, 2008). The increase in childbearing within cohabitation may indicate that marriage is becoming more and more irrelevant, with cohabitation becoming an "alternative to marriage" (Heuveline and Timberlake, 2004). In South Africa, patterns of marriage have changed dramatically in recent years (Posel, et al., 2011). The decline of marriage rates amongst women and the increase in cohabitation is more prevalent amongst black African South African women (Hosegood et al., 2009).

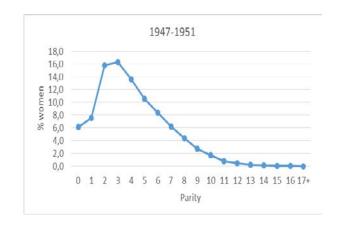
1.4 Parity distribution of women aged 45-49

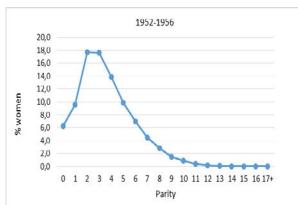
Information on the age of respondent or date of birth and the total number of births each woman has had provides the materials for birth-history analysis (Gaisie, 2005). The major concern is the magnitude of the accuracy of the information and its consequences for fertility measurement. On the basis of this, it is essential to always evaluate the quality of data of the population of interest. Figure 1 panel (a-e) shows plausible patterns of distribution of women aged 45–49 by number of children ever born except for cohort of 1967–1971. Over 17% of women in this cohort reported parity zero. The high proportion of women reporting zero children might be an error of coding parity unstated as parity zero. This is suggestive of possible errors in the data as data is acceptable when the proportion of women reporting parity zero does not exceed 10%.

Figure 1: panel (a-e): Distribution of women by parity and cohort year of birth

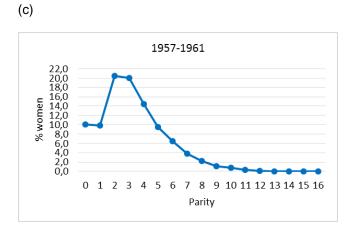
(a) (b)

(e)

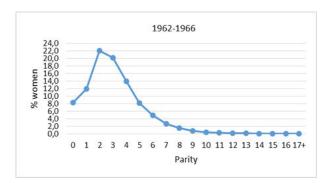


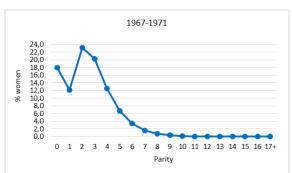


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(d)





1.5 Quality of fertility data from sources used

This report is not aimed at estimating fertility indicators, nonetheless it is necessary to comment on the quality of data employed in the analysis. The process of correcting the errors in the 1996 Census fertility data has been described in other publications (Moultrie and Timaeus, 2002 and 2003). With regard to 2001 fertility data, Moultrie and Dorrington, 2004 interrogated demographic and fertility variables, while Statistics South Africa, evaluated fertility data from Census 2011 and Community Survey 2007 (Stats SA, 2010 and 2015). On the other hand, the Bureau of Market Research, 2017 suggested that the quality of fertility data from Community Survey 2016 is reasonable to estimate fertility indicators.

Upon interrogation and correction of these data sets, it was found that the magnitude of errors and inconsistencies inherent in fertility data is not likely to affect conclusions drawn from the data when indirect methods of estimation are applied.

Chapter 2: Average completed family size and age specific fertility rates

2.1 Introduction

Demographers recognise the term fertility as the number of live births that a woman has had in her life time, and it is the opposite of what is known as childlessness (Weeks, 2015). Since literature confirms fertility transition in South Africa this section of the report aimed to establish whether different components of fertility behaviour amongst women aged 45–49 has changed over time. This was achieved by looking at the fertility indicators of women from different cohorts.

2.2 Average completed family size

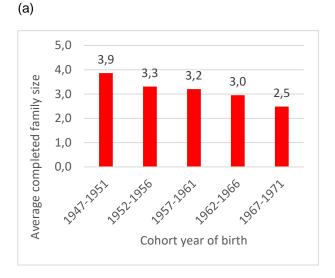
This sub-section presents the average completed family size of women aged 45–49 by the year of birth of the mother. The indicator was estimated from children ever born which is an aggregate measure of a woman's life time fertility experience up to the moment at which the data are collected (United Nations, 1983).

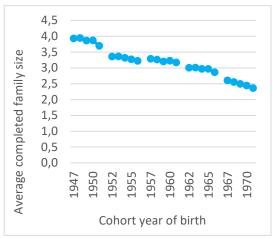
2.2.1 Average completed family size for different cohorts

Figure 2 panel (a) indicates that the average completed family size has been declining gradually from 3,9 children for the cohort of women born between 1947 and 1951 to 2,5 children for the cohort of women born between 1967 and 1971. The highest decrease in average completed family size (0,6) was observed between the first cohort of 1947–1951 and the second cohort of 1952–1956. Panel (b) indicates that there was a decrease in completed family size by single year of birth. For instance the average completed family size of cohort born between 1962 and 1966 ranged from 3,0–2,9 whereas the same indicator ranged from 2,6–2,4 for the cohort of women born between 1967 to 1971. A noticeable year-to-year decrease was observed among women born between 1950 and 1951 where the average completed family size decreased from 3,9 to 3,7.

(b)

Figure 2: Panel (a-b): Average completed family size by year of birth of the mother





2.2.2 Average completed family size by population group and year of birth of the mother

Transitions in average completed family size by population group are shown in Figure 3. The population group differentials indicate a similar pattern of decrease in completed family size across the generation of cohorts. Over time, average completed family size was highest among black Africans followed by coloureds and low amongst white women, followed by Indian/Asian population group. Black African and coloured cohorts born in 1947 had an average completed family size of 4,5 and 3,8. The last cohorts from the same population groups still had higher average completed family size of 2,6 and 2,1 respectively.

The pattern of decline in average completed family size was steeper for black African women compared to the other population groups. For instance, from cohorts born between 1947 and 1967 results show a difference of 1,6 in average completed family size of black Africans whilst the white population group shows a difference of 0,7 for the same period.

With the exclusion of black Africans, the second and fourth cohort of women showed a gradual decline in average completed family size. From a high of 2,0 for cohorts born in 1952 to 1956 the average completed family size of whites was recorded at 1,9 between 1962 and 1964 before reaching 1,8 in the cohorts born between 1965 and 1966.

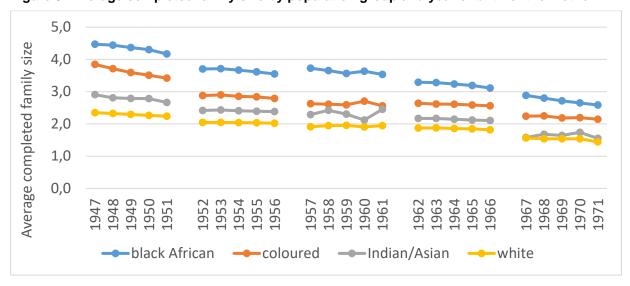


Figure 3: Average completed family size by population group and year of birth of the mother

2.2.3 Average completed family size by province and cohort year of birth of the mother

Differentials in average completed family size by province and cohort year of birth are shown in Figure 4. There was a decrease in average completed family size from one cohort to another except in Limpopo which experienced a constant average completed family size of 4,5 in the first and second cohort.

The difference in average completed family size from the third and fourth cohorts ranged from 0,5 in Limpopo to 0,1 in Gauteng. Across all cohorts average completed family size was lower for Gauteng and Western Cape. In the first and last cohort, Gauteng showed an average completed size of 3,0 and 2,2 and Western Cape showed 3,2 and 2,1. In contrast, Limpopo (4,5 and 3,2), followed by Mpumalanga (4,4 and 2,8) and Eastern Cape (4,5 and 2,7) presented the highest average completed family size.

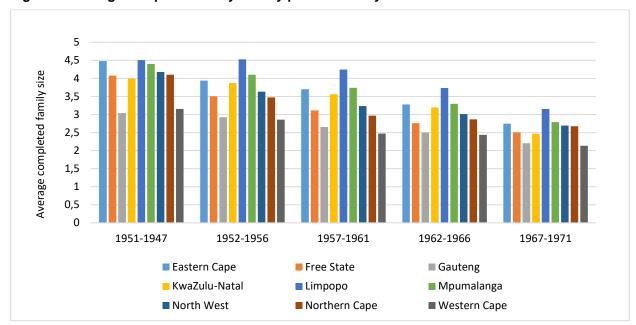


Figure 4: Average completed family size by province and year of birth of the mother

2.3 Differentials in average completed family size by marital status

The discipline of demography considers marital characteristics to have a significant effect on fertility. Being in a union as opposed to not being in a union is understood to expose one to the risk of childbearing. Nonetheless, the effect of marriage on fertility has been extensively contested in South Africa (Udjo, 2001).

In order to establish whether fertility behaviour in South Africa still differs by marital characteristics, the analysis of women who have been, and have not been in a union and the percentage of those women who reported giving birth to a child is presented in this section. A comparison of average completed family size by whether the mother has been in a union or never been in a union is also explored.

2.3.1 Women who have been, and have not been in a union by cohort year of birth

Amongst all cohorts there was a high percentage of women who have been in a union relative to women who have never been in a union (Figure 5). In the cohort born between 1952 and 1956; 80,6% of women reported that they have been in a union whilst 19,4% from the same cohort had never been in a union. The percentage of women who were never in a union starts from a low of 17,2% amongst the cohort of women born between 1947 and 1951, then increases to 19,4% and 23,3% when progressing to the third and fourth cohorts of 1952–1956 and 1957–1961 and then increased to an average high of 25,5% amongst women in the last two cohorts (1962–1966 and 1967–1971). On the other hand, there is a decreasing trend of women who were found to have been in a union. They start from a high of 82,8% in the first cohort to 80,6% and 76,7% in the second and third cohort before reaching an average of 74,1% in the third and fourth cohorts.

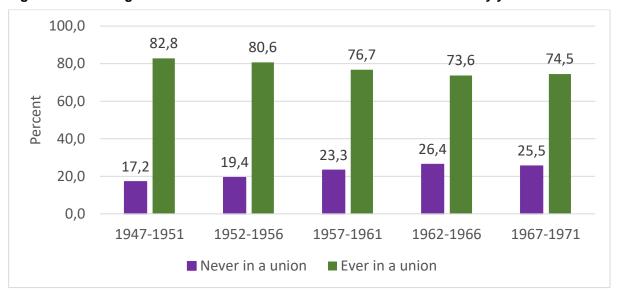


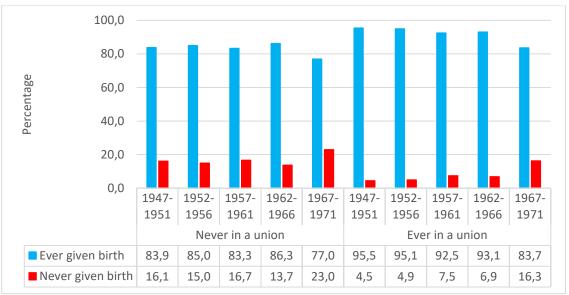
Figure 5: Percentage of women who have been and never been in a union by year of birth of women

2.3.2 Women who have given birth to a child by marital status

The percentage of women who have given birth to a child by marital status are shown in Figure 6. Results indicate that across the cohorts the highest percentage of women who have been in a union reported giving birth to a child whist a lower percentage of women who were never in a union recorded to have never given birth to a child. Amongst women born between 1947–1951, 83,9% who were never in a union reported giving birth. On the other hand 95,5% of women who were ever in a union reported giving birth to a child.

Noticeable differences were evident in the last cohort. There was a decrease in women who were never in a union and have reported having a child from 86,3% in women born between 1962 and 1966 to 77% in 1966—1967 cohort. Amongst the same category, women who were never in a union and did not have children increased from 13,7% in the second last cohort to 23,0% in the last cohort. A similar pattern was also observed amongst women who were ever in a union.

Figure 6: Percentage of women who reported giving birth to a child by marital status and year of birth of women



2.3.3 Women who gave birth by population group, marital status and year of birth women

Across the cohorts, the highest proportion of black African and coloured women who were never in a union reported to have children relative to white and Indian/Asian women as indicated in Figure 7. Amongst the cohort of 1947–1951 of women who were never in a union, 88,1% and 77,9% of black African and coloured women reported to have children whilst only 24,2% and 29,9% of white and Indian/Asian women had children. With regards to women who were ever married, all population groups seem to have children however, there was a significant decrease from 1962–1966 to 1967–1971 cohorts across all population groups. For instance in the 1947–1951 cohort 96,0% and 93,7% of Indian/Asian and white women who were ever in a union had children and these decreased to an average of 76,3% in the last cohort of 1967–1971.

100,0 80,0 60,0 40,0 20,0 0,0 1947-1952-1957-1962-1967-1947-1952-1957-1962-1967-1951 1956 1961 1966 1971 1951 1956 1961 1966 1971 Never in a union Ever in a union Black 88.1 88.2 87.4 88.7 79.8 96.0 95.4 93.6 93.8 85.3 Coloured 77,9 79,6 73,6 81,7 95,6 95,6 84,9 70,3 92,6 94,6 ■ Indian/Asian 24,2 27,7 41,1 42,2 96,0 95,8 92,9 92,4 76,2 31,1 white 29,9 28,1 33,4 34,6 29,6 93,7 93,2 88,4 89,0 76,6

Figure 7: Percentage of women who reported giving birth to a child by population group and marital status and year of birth of women

2.3.4 Average completed family size and marital status

Figure 8 presents differentials in average completed family size by marital status. From the first to the third cohort, there was a noticeable difference in average parities by marital status. Amongst the cohorts born in 1952, women who have never been in a union had an average completed family size of 2,8 whilst women who have been in a union were found to have an average completed family size of 3,9. The difference in average completed family size began to converge in the fourth and fifth cohorts. The difference in average completed family size between women who have been in a union and women who have not been in a union had decreased by an average of 0,5.

Overall, average completed family size of women who were ever in a union and women who have never been in a union has been decreasing gradually with each cohort. The levels of average completed family size of women born in 1947 who were in a union started at 4,3 whilst the average completed family size of women who were not in a union was at 3,2. These decreased to 2,5 and 2,0 in the last cohort respectively.

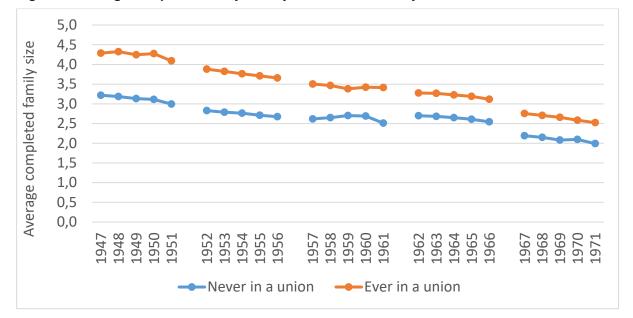


Figure 8: Average completed family size by marital status and year of birth of the mother

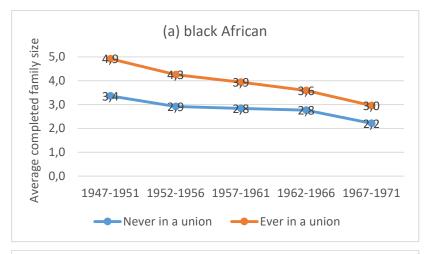
2.3.5 Average completed family size by population group, marital status and year of birth of the mother

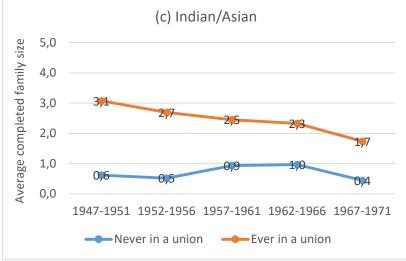
Findings from Figure 9 (panels a-d) shows that across all cohorts the highest difference in average completed family size of women who have been in a union and women who have never been in a union is pronounced amongst Indians/Asians followed by women in the white population group. Amongst Indians/Asians average completed family size of women who were in a union and women who were not in a union differs by 2,5 and 2,2 in the first and second cohort.

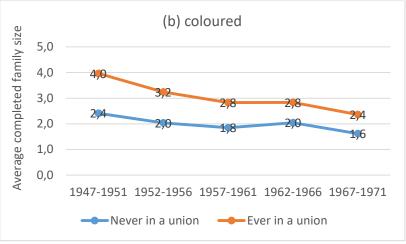
Amongst Indians/Asians and white women who have never been married, there was a consistent average completed family size of less than one across all cohorts. Within the same population groups there was a decrease in average completed family size between 1947 and 1951, to 1967 and 1971 cohorts. It decreased from 3,1 to 1,7 amongst Indians/Asians and 2,5 to 1,6 amongst white women respectively.

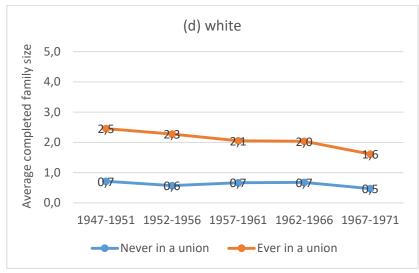
Black African and coloured women had a gradual declining pattern of average completed family size amongst women who were ever in a union and those who had never been in a union as compared to Indians/Asians and white women. For instance, the average completed family size amongst black African women who were ever in a union decreased from 4,9 (1947–1951) to 3,0 (1967–1971) and from 4,0 (1947–1951) to 2,4 (1967–1971) amongst coloured women.

Figure 9: panel (a-d): Average completed family size by marital status, population group and year of birth of the mother









2.3.6 Average completed family size by province, marital status and year of birth of the mother

Appendix A1 (Panels 1–9) indicate that across all provinces the cohort born between 1947 and 1956 had the highest average completed family size of women who were never in a union and women who were ever in a union. The levels of completed family sizes decreased with the subsequent cohorts. Amongst the cohort of women born between 1947 and 1951 Mpumalanga (3,8) followed by Limpopo (3,7) and KwaZulu-Natal (3,5) are marked by high average completed family sizes for women who have never been in a union. Comparatively Limpopo (5,0), followed by Eastern Cape and Mpumalanga (4,9) had the highest average completed family size amongst women who have been in a union.

Within the cohort born between 1947 and 1951, differences in average completed family size between women who have been in a union and women who have not been in a union were more distinct in Eastern Cape (1,8) and Limpopo (1,3). On the other hand the cohort of 1947–1951 in Western Cape and Gauteng had a narrow gap of average completed family size of 0,6 and 1,1 between women who have been in a union and women who have not been in a union. Change in fertility behaviour was noticeable from the cohort of 1962–1966 in Free State (0,7) followed by North West (0,6) and Mpumalanga (0,5).

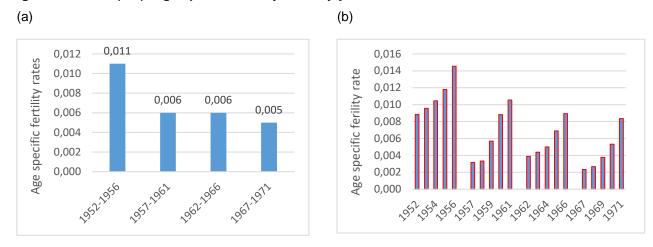
2.4 Age specific fertility rates

This sub-section presents age specific fertility rates by year of birth of the mother. The indicator reflects the number of live births per 1 000 women aged 45–49. Differentials in age specific fertility rates are shown by population group and province.

2.4.1 Age specific fertility rates

Figure 10 indicates that age specific fertility rate was highest at 0,011 amongst women born between 1952 and 1956 and then declined to an average of 0,006 between the second and third cohorts before reaching 0,005 in the last cohort of 1967–1971. As expected the pattern of age specific fertility rates for the four cohorts of women shown in Figure 10 decreased with the cohorts. For example, the cohort of 1956 had an age specific fertility rate of 0,015 which declined to 0,008 in 1971.

Figure 10: Panel (a-d): Age specific fertility rates by year of birth of the mother



2.4.2 Age specific fertility rates by population group and cohort year of birth of the mother

Differentials in age specific fertility rates by population group are shown in Figure 11. Across the cohorts, black African and coloured women had the highest age specific fertility rates whilst Indian/Asian women had lower rates. The age specific fertility rates across all cohorts indicate a declining trend amongst all population groups except for the white population in the 1967–1971 cohort which shows a slight increase in fertility from 0,001 in the second cohort to 0,003 in the last cohort.¹

Age specific fertility rate 0,016 0,014 0,012 0,010 0,008 0,006 0,004 0,002 0,000 1952-1956 1962-1966 1967-1971 ■ Black African 0,014 0,007 0,005 Coloured 0,004 0,003 0,006 ■ Indian or Asian 0,002 0,002 0,001 White 0,002 0,001 0,003

Figure 11: Age specific fertility rates by population group and year of birth of the mother

¹ Data for the 1947–1951 and 1957–1961 show lower levels of age specific fertility rates due to fewer cases reported particularly amongst Indian/Asian and white population groups.

2.4.3 Age specific fertility rates by province and cohort year of birth of the mother

Differentials in age specific fertility rates by province and cohort year of birth of the mother are shown in Figure 12. The figure suggests that age specific fertility rates decrease from the earlier cohort of 1952–1956 to the later cohort of 1967–1971.

Women in Eastern Cape and Limpopo appeared to have the highest fertility in the first cohorts with an average of 0,031. In the second cohort Mpumalanga (0,009) followed by Eastern Cape (0,008) cohort had higher age specific fertility rates compared to other provinces. Analysis in the last cohort highlights that higher fertility was evident in Limpopo (0,005) and North West (0,003).²

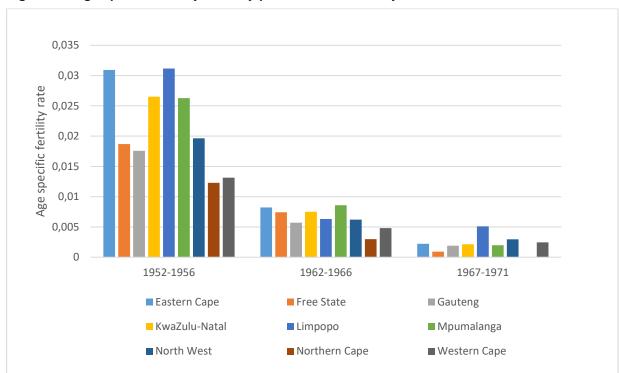


Figure 12: Age specific fertility rates by province and cohort year of birth of the mother

Cohort fertility in South Africa: Exploring fertility behaviour in birth cohorts, Report 03-00-03

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² Due to fewer cases of women aged 45-49 in Northern Cape, the value for age specific fertility rate is 0 in the last cohort.

Chapter 3: Childlessness

3.1 Childlessness amongst cohorts of women aged 45-49

Fertility in South Africa is continuing to decline and childlessness has become an important area of interest. The caveat that remains unaddressed in the data sources is the difficulty of differentiating between voluntary or involuntary childlessness.

3.1.1 Level of childlessness by year of birth of the women

Figure 13 indicates that childlessness of the cohort of women 45–49 decreased over time from 6,1% amongst the cohort of 1947–1951 to 17,9% amongst the cohort of 1967–1971. Childlessness of the later cohort was more than two times the level of childlessness of the cohort born between 1962 and 1966.

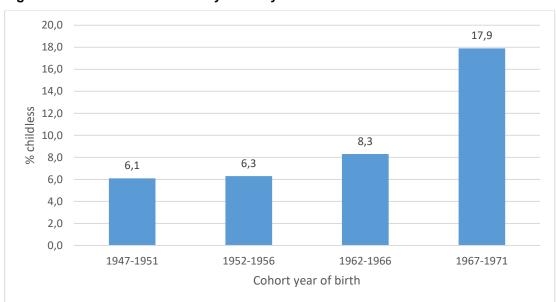


Figure 13: Childlessness levels by cohort year of birth of women

3.1.2 Level of childlessness by province and year of birth of women

The results in Figure 14 suggest that within each population group, there was an increase in the levels of childlessness across generations of cohorts. Substantial increases were observed amongst white and Indian/Asian women born between 1962 and 1966; and 1967 and 1971 where the levels of childlessness doubled from 10,6% to 26,5% and 13,6% to 26,4% respectively. In all cohorts black African and coloured women had the lowest but increasing levels of childlessness. The level of black African childlessness was at 5,3% for the 1947–1951 cohort and was three times more (16,2%) for the cohort of 1967–1971.

30,0 25,0 % childless 20,0 15,0 10,0 5,0 0,0 1947-1951 1952-1956 1962-1966 1967-1971 ■ black African 5,3 5,8 7,6 16,2 coloured 6,9 6,3 7,5 17,8 ■ Indian/Asian 8,0 7,6 10,6 26,5 white 8,4 8,9 13,6 26,4

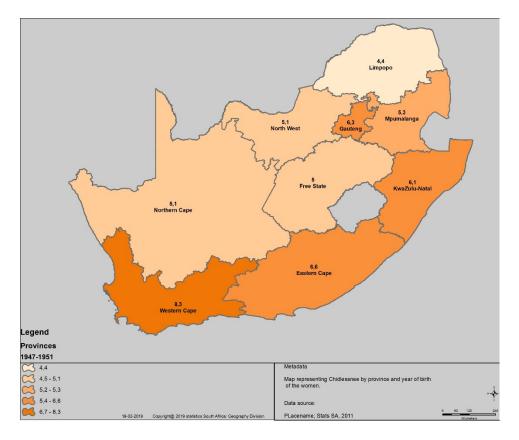
Figure 14: Childlessness by population group and year of birth of the women

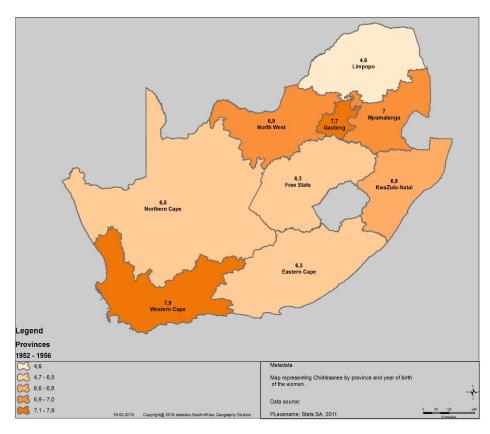
3.1.3 Childlessness by province and year of birth of women

Figure 15 (panels a-d) indicates that, overall, from the cohort of 1947–1951, there has been an increase in the levels of childlessness across all provinces. This excludes Eastern Cape which indicates a slight decrease of childlessness of 6,6% from the cohort of 1947-1951 to 6,3% for the cohort of 1952–1956. Over three generations of cohorts (i.e. 1947–1951,1952–1956 and 1962–1966) Western Cape and Gauteng were provinces that had the highest levels of childlessness that ranged from 8,3% to 9,1%, and 6,3% to 9,6% respectively; while Limpopo had the lowest level with an average 4,8% across all the three cohorts. Amongst women born from 1967–1971, KwaZulu-Natal led by 22,3% followed by Gauteng (19,2%) and Western Cape (18,1%).

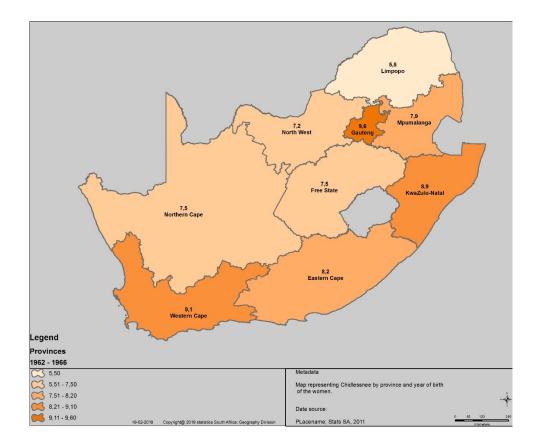
Figure 15: (Panel a-d) Childlessness by province and year of birth of the women

(a) 1947-1951 (b) 1952-1956

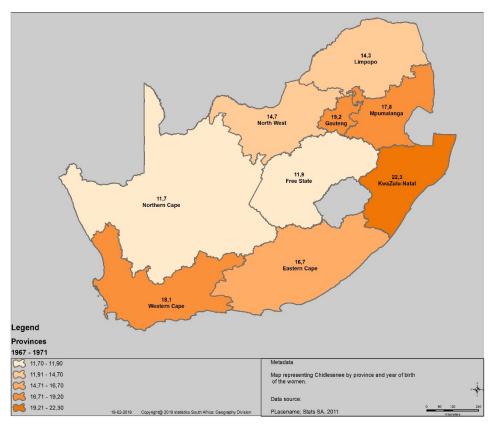




(c) 1962-1966



(d) 1967-1971



3.1.4 Childlessness by marital status and year of birth of women

It is evident from Figure 16 that across all the cohorts the level of childlessness was lower for women who at least have been in a union than those who have not been in a union. The proportion of women for the 1947–1951 cohort who were childless and have not been in a union (14,7%) was more than three times that of the proportion that have been in a union (4,4%). Interestingly, there is an increasing pattern of childlessness across all women. Amongst those who have been in a union, it increased from 4,4% for 1947–1951 to 16,2% for 1967–1971 cohorts and from 14,7% to 22,8% amongst those who have never been in a union.

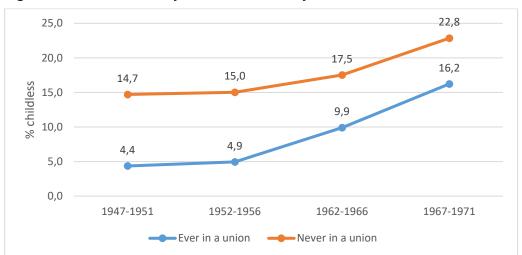


Figure 16: Childlessness by marital status and year of birth of women

3.1.5 Childlessness by relationship to head of the household and year of birth of the women

The results in Figure 17 indicate that childless women across all the generations of cohorts were more likely to be daughters of the head of the households. The proportion of childless women who reported to be such daughters was consistent for cohorts of 1947–1951 and 1952–1956 at an average of 16%. These women increased by 9,1% from 1962–1966 to 1967–1971 cohorts. Fewer women who were childless reported to be heads of households and wives to the heads of households amongst women born from 1947–1951, 1952–1956 and 1962–1966 but the levels increased within the cohort of 1967–1971. It is worth to note that the proportion of childless women who reported to be heads of households for the cohort 1967–1971 was more than double (17,3%) that of the 1962–1966 cohort (7,3%).

30,0 25,0 20,0 % childless 15,0 10,0 5,0 0,0 1947-1951 1952-1956 1962-1966 1967-1971 ■ Head of household 4,9 7,3 17,3 Wife 4,4 4,9 6,7 15,6 ■ Daughter 16,4 16,0 18,1 27,2

Figure 17: Childlessness by relationship to the head of the household and year of birth of women

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3.1.6 Childless women by education and employment levels

Figure 18 shows similar patterns of level of education across the cohorts where fewer women who were childless had primary education and the majority of them had secondary and tertiary education. The significant change in childlessness by level of education acquired is reflected from the 1962–1966 cohort to 1967–1971 cohort. Childless women with primary, secondary and tertiary education increased from 7,4% to 15,4%, 8% to 17,5% and lastly from 10,8% to 18,6%; respectively.

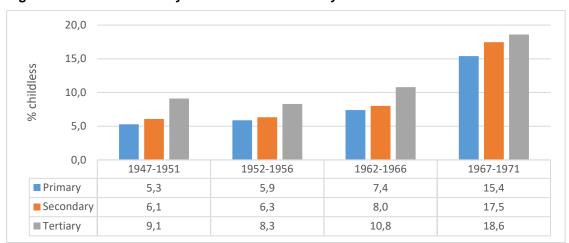
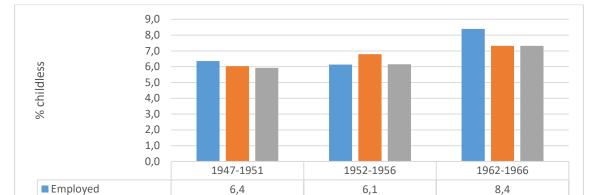


Figure 18: Childlessness by level of education and year of birth of women

Unemployed

■ Not economically active

Childless women for the cohort of 1962–1966 appeared to be more in employment compared to cohorts of 1947–1951 and 1952–1956 (Figure 19)³. Eight per cent of childless women for the 1962–1966 cohort were employed whilst an average of 6% of these women were employed for cohorts of 1952–1956 and 1947–1951. On the other hand, the levels of unemployment and not economically active childless women slightly increased for the 1962–1966 cohort. For instance, 5,9% for the cohort of childless women born between 1947 and 1951 were not economically active and for the 1962–1966 cohort, 7,3% of these women were not economically active.



6,8

6,1

7,3

7,3

Figure 19: Childlessness by employment status and year of birth of women

6,0

5,9

³ Data on employment status of 1967-1971 cohort was not used since employment statistics from Community Survey 2016 were inconsistent with the published employment levels for the same period.

Chapter 4: Family size of cohorts of women

4.1 Family size by year of birth of women

Figure 20 reveals that although the proportion of women with parity 6+ was highest at 28,2% in the 1947–1951, the majority of women reported 2 and 3 children across all cohorts. These parities show an increasing pattern from the cohort of 1947–1951 to the cohort of 1967–1971. Almost 18% of women of cohort 1947–1951 had 2 children and that increased to 28,5% among women born between 1967 and 1971. Contrary to this, the proportion of women who had 5 to 6+ children decreased from the first generation of cohorts to the last one. The last cohort of 1967–1971 had three times less parity 6+ than the cohort of 1947–1951.

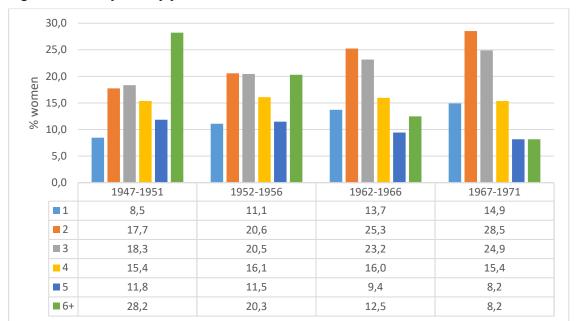


Figure 20: Family size by year of birth of women

4.2 Family size by level of education

A vast array of literature has documented the fundamental role of educational attainment in shaping women's childbearing patterns. Figure 21 indicates that the majority of women across all cohorts who had 1–3 children had secondary education relative to their counterparts who had 4+ children. Amongst women with 1–3 children almost 3 in 5 women (62,1%) of the 1947–1951 cohort had secondary education and about 2 in 3 (68,3%) of women of cohort 1967–1971 had secondary education. Further, the proportion of women with 1–3 children who had tertiary education was at 17,2% in the 1967–1971 cohort. On the other hand, there was a marked increase of women with family size of 4+ who had secondary education from 52,8% for the cohort of 1962–1966; increasing to 60,5% for the cohort of 1967–1971. Even though the proportions of women with parity 1–3 who had tertiary education were higher than those women with parity 4+, there was a slight increase amongst women with parity 4+ who had tertiary education from 3,3% for cohort of 1947–1951 to 6,4% for cohort of 1967–1971.

70,0 60,0 50,0 % women 40,0 30,0 20,0 10,0 0,0 1947-1951 | 1952-1956 | 1962-1966 | 1967-1971 1947-1951 | 1952-1956 | 1962-1966 | 1967-1971 1 - 3 Primary 26,2 30,0 21,3 14,4 53,4 54,4 41,9 33,1 Secondary 62,1 57,7 63,3 68,3 43,3 41,1 52,8 60,5 11,7 12,3 17,2 3,3 4,5 ■ Tertiary 15,4 5,3 6,4

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Figure 21: Family size by level of education and year of birth of women

4.3 Family size by employment and year of birth of women

Figure 22 suggests that about one in two women (51,3%) who had 1–3 children across the three cohorts were employed. The proportion of these women who were economically active decreased from 35,0% from the 1947–1951 cohort to 33,3% for the cohort of 1962–1966. Women with 4+ children were less employed compared to those with 1–3 children. Only 34% on average of these women across all the cohorts were employed. Amongst both categories of women, there was an increase of unemployed women from the cohort of 1947–1951 to 1952–1956 cohort that declined amongst women born between 1962 and 1966. The highest proportion of not economically active women were profound in cohorts of women with 4+ children across all cohorts with the percentage of 45,3%, 43,6% and 47,3%; respectively.

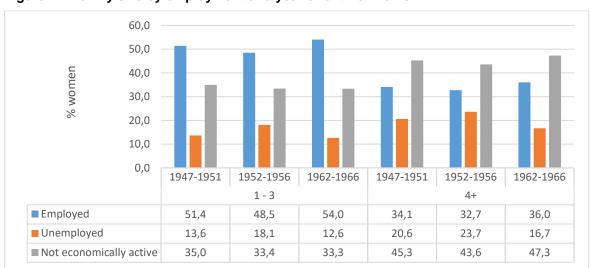


Figure 22: Family size by employment and year of birth of women

4.4 Family sizes by occupation

Results in Figure 23 show that the highest proportion of women who had 1–3 and 4+ children across all the cohorts were employed in elementary occupations. However the levels for the two groups of women amongst the three cohorts show a declining pattern. Sixty-six per cent of women who had 4+ children within the cohort of 1947–1951 were employed in elementary occupations. This decreased to 48,1% within the same category of women at the 1962–1966 cohort. The high proportion of women with parity 1–3 who were employed in elementary occupations amongst the 1952–1956 and 1962–1966 cohorts, were followed by women who were technicians professionals and clerks.

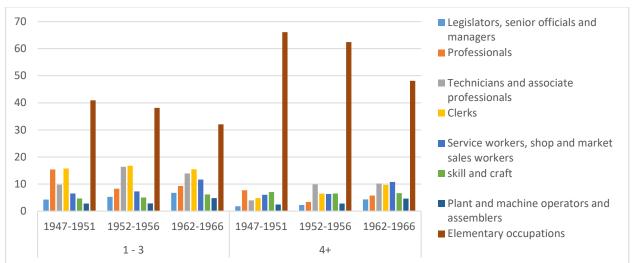


Figure 23: Family size by occupation and year of birth of women

4.5 Family sizes by relationship to the head of the household

Figure 24 indicates that as the proportion of women who were wives decreases through the cohorts, the proportion of women who reported that they were heads of households increased. The pattern is similar for the cohorts of women with 1–3 children and 4+ children. However, the proportion of heads of households seemed to be higher amongst cohorts of women who had 4+ children than amongst cohorts with smaller family sizes. For the cohorts with 4+ children, the women who reported that they were heads of households increased from 41,8% within the cohort of 1947–1951 to 54,7% within the cohort of 1967–1971 whilst for cohorts of women with 1–3 children the proportions increased from 32,1% to 49,2% across the same cohorts.

Statistics South Africa

60,0 50,0 women 40,0 30,0 20,0 10,0 0,0 1947-1952-1962-1967-1947-1952-1962-1967-1951 1951 1956 1956 1966 1971 1966 1971 1 - 3 4+ ■ Head of household 40,6 32,1 44,4 49,2 41,8 48,0 51,5 54,7 ■ Wife 53,8 46,4 36,2 46,9 40,6 35,9 43,1 42,2 ■ Daughter 7,4 5,2 4,7 5,6 3,3 2,4 2,9 3,6 other 8,9 8,3 6,9 7,2 7,9 7,3 5,1 5,8

Figure 24: Family size by relationship to the head of the household and year of birth of women

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4.6 Family sizes by type of union

Generally, the proportion of women in a union with smaller and bigger families (4+) sizes were higher than women who were not in a union with the same number of children across all the cohorts (Figure 25). The proportion of women with bigger family size (4+) that were in a union over all periods of cohorts were higher than women with 1–3 children who were in a union. On the contrary, the percentage of women with 1–3 children who were not in a union seemed to be higher than those with 4+ children in the same category. Interestingly there was a slight decrease amongst women in a union with smaller family size from 82,3% in a cohort of 1947–1951 to an average of 73,2% in last cohort of 1962–1966 and 1967–1971.

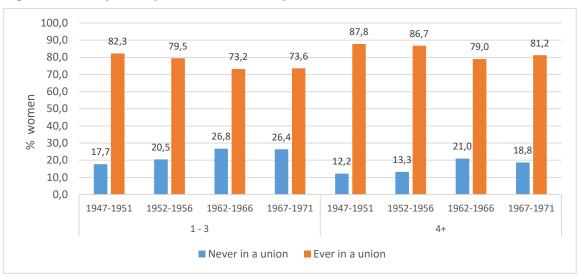


Figure 25: Family size by marital status and year of birth of women

Chapter 5: Parity progression ratios and age at first birth

Parity progression ratio (PPR) represents the proportion of women who progress from one parity to the next parity (Moultrie and Zaba, 2013). PPR plays an important role on the overall fertility dynamics of any population because of the fact that it not only reflects the extent of family limitation practices that are being followed in the population but also determines total fertility of the population. The knowledge of PPR is of particular importance to developing countries in order to assess the impact on fertility of various family planning programmes that are being currently undergoing on an unprecedented scale. This section seeks to examine the fertility patterns of different cohorts of women aged 45–49 using PPRs.

5.1 Parity Progression Ratio

The Parity Progression Ratio (PPR) across all cohorts began to decrease as the parity increases and PPR decreases with subsequent cohorts (Figure 26). Except for parity 8–11, the highest parity progression ratios were observed in the 1947–1951 cohort whilst the 1967–1971 cohort was characterised by lower parity progression ratios. Amongst women born in 1947-1951, the PPR at parity 0 was 0,935, this ratio is higher when compared with the PPR of 0,820 for women born between 1967 and 1971. The PPR of moving from childlessness to parity 1 was lower (0,820) relative to the ratio of progressing from parity 1 to parity 2 (0,851) for the last cohort born in 1967–1971. Across all the cohorts, there was a decline in the ratios after progressing from childlessness. For instance amongst the cohort of 1962–1966 the PPR declined from 0,863 at parity 1 to 0,707 at parity 2.

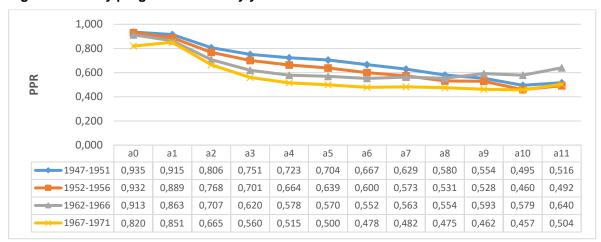


Figure 26: Parity progression ratio by year of birth of cohort

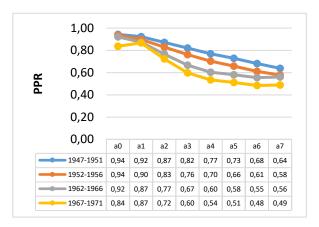
5.1.1 Parity progression ratios by population group

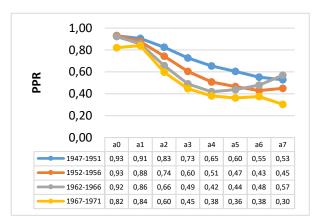
Significant variations of PPRs across all population groups were observed in all cohorts. The pattern of PPRs by population groups reflects the pattern at national level (Figure 26) especially at parity 0. Figure 27 indicates that the probability of progressing to the first child appear to be higher across all population groups. The cohort of 1967–1971 amongst black Africans (0,84) and coloured (0,82) women had the highest probability of moving from parity zero to have the first child compared to their counterparts. Except at parity 1 in the last cohort of

1967–1971, the PPR for these population groups decreased gradually with increasing parity. Across all the cohorts there is a marked decrease in the progression ratio at parity 1 and parity 2 and the subsequent cohorts for Indian/Asian and white population groups. For instance, in the cohort born between 1967–1971 PPR of Indian/Asians decreased from 0,77 at parity 1 to 0,43 at parity 2. The increasing PPR from parity 5 amongst Indian/Asian and white women born between 1962 and 1966 (and other cohorts) may be explained by the fewer cases of women reporting higher parities. Due to overall fluctuations in PPR from parity 7 and upwards the analysis by population group and province was limited to parity 7.

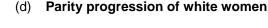
Figure 27: Panel (a-d): Parity progression ratio by population group and year of birth of women

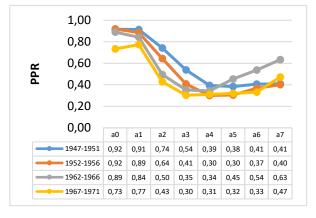
(a) Parity progression of black African women (b) Parity progression of coloured women

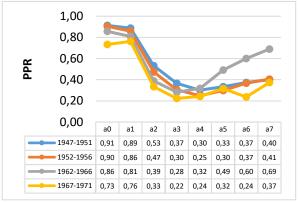




(c) Parity progression of Indian/Asian women







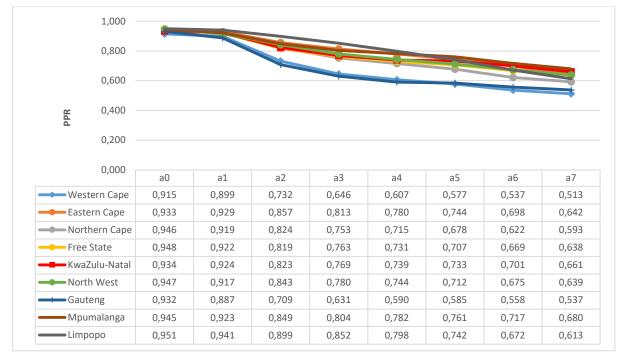
5.1.2 Parity progression ratios by province and year of birth of women

In the last cohort of 1967-1971 Northern Cape (0,883) and Free State (0,880) had the highest probability of moving from childlessness to having at least one child (Figure 28). In contrast to other cohorts, some provinces in the last cohort of 1967–1971 had higher PPR at parity 1 relative to parity 0. For example, in Limpopo and Mpumalanga the ratio of progression from being childless to having at least one child was 0,820 and 0,875 and this increased to 0,857 and 0,920 when progressing in to having a second child. In all the cohorts Gauteng and Western Cape indicated a noticeable decline from one parity to another. Gauteng women born in the 1962–1966 cohort had a PPR of 0,838 at parity 1 which dropped to 0,627 at parity 2. Overall the gap in the PPR of Gauteng and Western Cape relative to other provinces are pronounced in the first cohort of 1947–

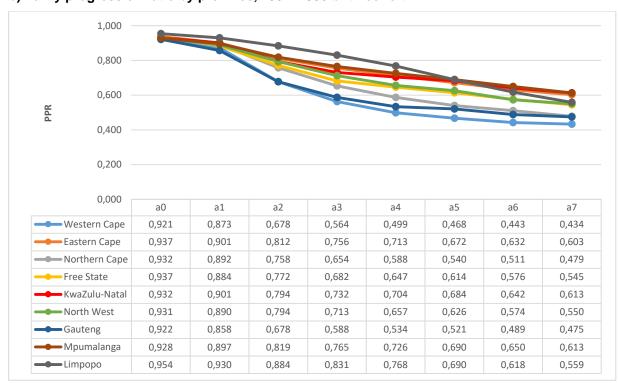
1951 followed by the second cohort of 1952–1956. Amongst Gauteng women from the 1947–1951 cohort PPR at parity 2 was 0,709 whilst it was higher for Eastern Cape at 0,857. Generally Limpopo had the highest PPR especially at parity 1 to parity 4.

Figure 28: Panel (a-d): Parity progression ratio by province and year of birth of women

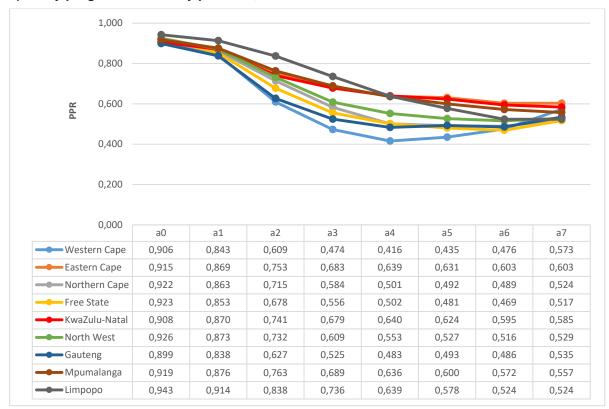
a) Parity progression ratio by province, 1947-1951 birth cohort



b) Parity progression ratio by province, 1952-1956 birth cohort



c) Parity progression ratio by province, 1962-1966 birth cohort



d) Parity progression ratio by province, 1967-1971 birth cohort



5.2 Age at first birth

Teenage pregnancy poses a challenge to global society. A significant number of these pregnancies are unplanned, which in any population can raise certain challenges (Ramulumo and Pitsoe, 2013). Although fertility is declining, teenage pregnancy has been experiencing a slower decline and remains a problem in South Africa especially among school-going children (Panday et al., 2009; Willan, 2013). The declining adolescent pregnancies from 30% in 1984 to 23% in 2008 has been visible but in the year 2016, the 13,6% of registered births in the country among adolescent girls (Odimegwu et al., 2018) was of concern .The realities of teenage pregnancy in South Africa are not pleasant and they have far-reaching implications. This section therefore explores age at first birth for different cohorts of women.

According to Figure 29, the majority of women born between 1947–1951 and 1962–1966 had their first births when they were aged 18, 19, 20 and 21 years⁴. Nonetheless the age at first birth for both cohorts peaked at age 20. The proportion of women who gave birth at these ages was higher among the 1962–1966 cohort. Since more women from the 1962 and 1966 cohort had their first birth earlier, less than half of women from this cohort had their first birth after the age of 21.

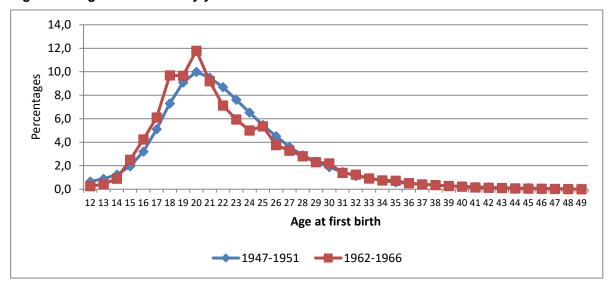


Figure 29: Age at first birth by year of birth of women

5.3 Age at first birth by population group

Figures 30 and 31 indicate that black Africans and coloureds started giving birth earlier than other population groups. Age at first birth for the two population groups born in 1947–1951 peaks at age 20, followed by a significant drop from age 21 and above. Amongst whites and Indians/Asians the peak was at age 22 and 23. Age at first birth amongst these population groups declines from age 23 and 24 respectively. Amongst the 1962–1966 cohort more women had their first births at these ages.

⁴ Age at first birth for 1952–1956 and 1967–1971 cohorts are excluded from the analysis because the question relating to these variables were not asked in these surveys.

Amongst black Africans and coloured women born between 1947 and 1951 an average of 33% gave birth by age 19. In both cohorts 20% and 14% of Indian/Asian and white women on average had their first birth by the same age. In the 1962-1966 birth cohorts the proportion of black African women who had their first birth by age 19 increased to 37,8% while the proportion decreased to 30,6% amongst the coloured population group.

Figure 30: Age at first birth by population group and year of birth of women (1947–1951)

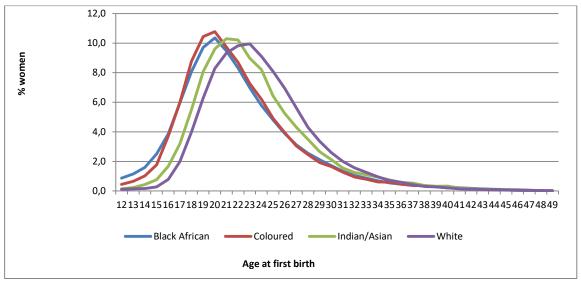
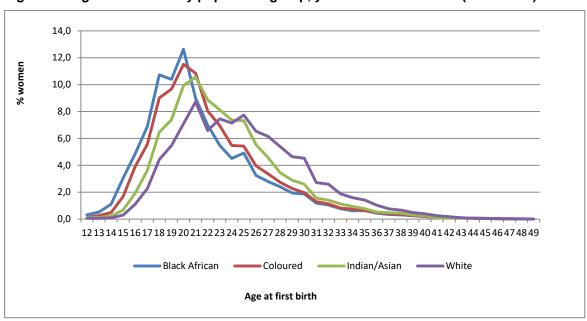


Figure 31: Age at first birth by population group, year of birth of women (1962–1966)



5.4 Median age and mean age at first birth

Figure 32 presents the mean and median ages at first birth for cohorts of 1947–1951 and 1962–1966. Results indicate that the mean age at which women started to give birth decreased slightly from 21,8 among 1947–1951 to 21,3 among 1962–1966 cohort. Similarly, half of the women from 1947–1951 cohort had their first birth at age 21. Amongst the women born between 1962 and 1966, the median age at which women had their first birth decreased to 20 years.

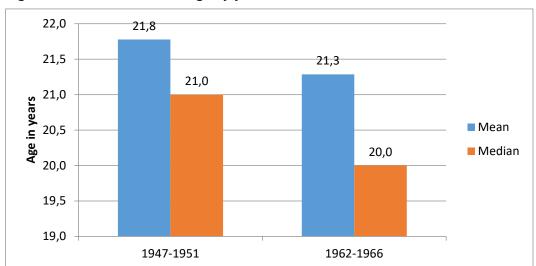


Figure 32: Mean and median age by year of cohort

Chapter 6: Summary of findings and discussions

The findings reveal different characteristics of parity by level of education, employment, the type of occupation, number children ever born, marital status and head of household. These are areas where South Africa has undergone radical transformation in recent decades. Fertility pathways across cohorts reveal that the proportion of childless women in the cohorts born between 1947 and 1951 increased considerably from 6,1% to 17,9% among the cohort of 1967–1971. There are three factors that could attest to this significant increase: Infertility among South African women might be increasing or late childbearing which can later in life cause infecundity. Although childlessness to a large extent is related to postponement of parenthood to a later age, it is expected that voluntary childlessness is increasing in industrialised countries (Sobotka 2009; Tanturri and Mencarini, 2008). In South Africa, mean age at childbearing cannot be excluded from the discussion since there has been shifts recently across all population groups. To a certain extent the high levels of childlessness for cohort of 1966–1971 might have been caused by late childbearing.

The results indicate that across all the cohorts women with smaller family size (1–3 children) had secondary and tertiary education compared to those with bigger family sizes (4+ children). These results are in line with the study by Bittencourt (2014), Lehr (2009) and Murtin (2013) who found that there was a negative and significant relationship between secondary enrolment rates and fertility within the Southern African Development Community (SADC) region. A 10% increase in secondary education diminishes fertility by about 0,5% to 2%, suggesting that investing in higher education has more effect in reducing fertility (Chisadza and Bittencourt, 2015). Since 1994, South Africa has made significant progress in putting in place legislations and policy frameworks for advancing equality and empowerment for women, children and people with disabilities. The last cohort of women with better educational outcomes could have benefited from new policies because they were at their prime ages when these policies were introduced.

Childlessness increased among married women from 4,4% for cohort of 1947–1951 to 16,2% for cohorts of 1967–1971. In Africa, marriage and procreation are intertwined and inseparable. It is presumed that readiness for marriage is readiness for procreation (Obiyo, 2016). Whether this emerging trend in South Africa is a result of voluntary childlessness or infertility, is an issue that needs to be further explored. Studies have shown that childbearing among married couples could be affected by couples disagreeing on fertility or the presence of fecundity problems, which may be caused by postponement of parenthood (Letherby, 1999).

Women who were childless particularly in the cohort of 1967–1971 were daughters to the heads of households. The findings from the study do not concur with what has been tested in some parts of the world. The increase in the childlessness rate, along with the drop in the fertility rate, has led to an increase in the proportion of women living in households without children (OECD, 2011). Rabe and Naidoo (2015) noted the striking variations of family structures in South Africa: For instance, the absence of biological fathers but the presence of other male authority figures in the households, the low fertility rate especially amongst white and Indian South Africans, the low nuptiality rate or advanced age at first marriage especially amongst black South Africans are well known. Perhaps the observation adds to an existing literature of change in family structure.

Findings on average completed family size concur with fertility levels already estimated from period data. There appears to have been a gradual decline in average completed family size from the first cohort of women born between 1947 and 1951 to the last cohort of women born between 1967 and 1971. Findings around the level and pattern of higher average completed family size observed amongst black Africans and coloured population groups support previous conclusions that the decline in fertility in South Africa is mainly driven by the fertility transition of black African and coloured population groups (Rossow et al., 2012). Given the reproductive population size of black African women in South Africa which represents 75% of the total women in the age group 15–49 in 2016, the national levels of fertility reflect the fertility levels of black African population group.

Relative to an accelerated pattern of decrease amongst black Africans followed by coloured population group, white and Indian/Asian population group experienced a gradual decrease in average completed family size. Starting from the first cohort, fertility of white and Indian/Asian population groups was far lower than all population groups. According to Rossow et al. (2012) the fertility of white population group was already low by the 1960s. Literature on socio-economic dynamics amongst various population groups have indicated that white population group had better outcomes compared to their counterparts and to date the trend still holds.

The age specific fertility rate was consistently low in the third and fourth cohorts, translating to 5 and 6 children per 1 000 women aged 45–49. The pattern of childbearing in South Africa generally peaks at ages 20–29 and then drops as age of women increases (Stats SA, 2015). The concentration of current fertility in the ages highlighted explains the low age specific fertility rate in women aged 45–49. As discussed above, the decrease in age specific fertility rates from earlier cohorts to later cohorts may be supported by improving levels of education of women over time. According to Rossow et al. (2012) higher education levels increase a woman's awareness and knowledge of family planning and contraception.

The current study showed that the percentage of women who are never in a union and who reported to have given birth has generally increased with the cohorts. The findings observed in the study are in line with international patterns. A study by Ventura (2009) that looked at non marital childbearing in the United States noted that the proportion of births to women who are not married is on the rise.

With the exception for the last cohort, the proportion of women progressing from childlessness in to having one child and from one child in to a second child remained higher from the 1947–1951 cohort to 1966–1971 cohort. As literature argued that total fertility in South Africa has been around 2 births per woman, the parity progression ratios do support the findings which indicate that after parity 2, the proportion of women moving to higher parity drops significantly (Stats SA, 2015).

The age at first birth for both cohorts peaked at age 20, however, the high proportions of women who gave birth early was from the cohort of 1967–1971. Adolescent pregnancy, occurring in girls aged 10–19 years, remains a serious health and social problem worldwide. Grant and Hallman (2008) note that in South Africa national data shows that one in five 18-year-old women has given birth, and more than 40% have become mothers by the age of 20. The Department of Basic Education observed that in 2014 about 68 000 school-going learners had given birth to at least one child in 2013, compared with 50 000 in 2009, and an additional 21 000 learners were pregnant in 2013 (Panday et al., 2009; Department of Education, 2014).

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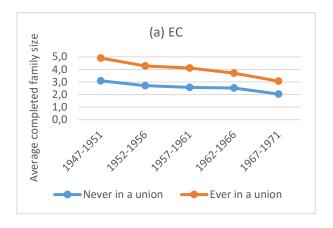
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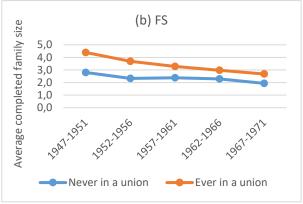
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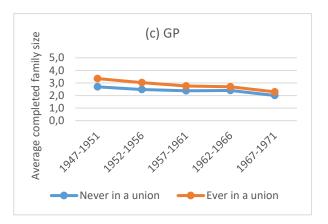
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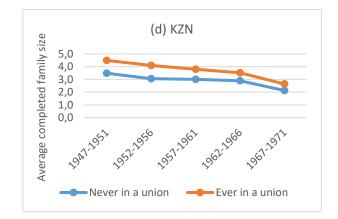
8. Appendix

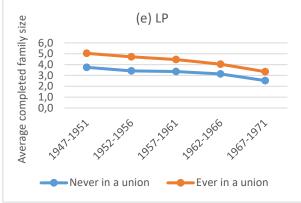
Figure A1 (Panel a-i): Average completed family size by province, marital status and year of birth of women

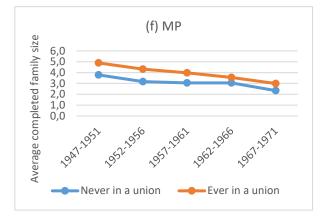






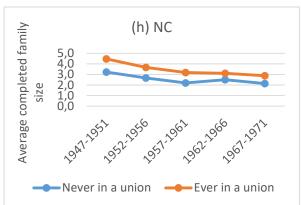


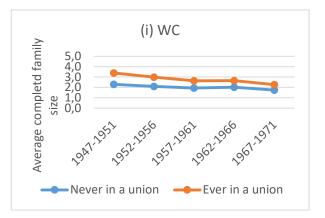




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