

# **Exploring childlessness and delayed childbearing in South Africa, 2001-2011**

Report 03-06-02(2001-2011)

Statistics South Africa

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**Exploring childlessness and delayed childbearing in South Africa, 2001-2011** / Statistics South Africa

Published by Statistics South Africa, Private Bag X44, Pretoria 0001

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Stats SA Library Cataloguing-in-Publication (CIP) Data

**Exploring childlessness and delayed childbearing in South Africa, 2001-2011** / Statistics South Africa.  
Pretoria: Statistics South Africa, 2015

**Report no. 03-06-02(2001-2011)**

62pp

ISBN 978-0-621-44496-4

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## List of abbreviations and acronyms

DHS:	Demographic and Health Survey
ISCO:	International Standard Classification of Occupation
MDGs:	Millennium Development Goals
Stats SA:	Statistics South Africa
SADHS:	South African Demographic and Health Survey
WHO:	World Health Organization

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## Acknowledgements

Statistics South Africa would like to thank Chantal Munthree and Lesego Olga Masebe for developing and compiling the thematic report.

Diego Iturralde, Princelle Dasappa-Venketsamy, Itani Ntsieni, Nyiko Tricia Maluleke and Mmatlala Ramosebudi are acknowledged for their contribution to the report.

The organisation is grateful to Dr Tshepo Mabela and Dihlolelo Phoshoko for their review of this publication.



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## Executive summary

National studies related to childlessness and fertility postponement in South Africa in the recent years have not been available due to lack of data; however, the 2011 national census data provide a girth of valuable fertility information including childlessness and age at first birth. Childlessness and fertility postponement describes a pattern of fertility, and is useful to better understand the family formations and the factors influencing the fertility transition in South Africa. Post-2001 there has been limited analysis of changes in fertility patterns in South Africa, particularly childlessness. The purpose of this paper is to determine the level of childlessness in South Africa over time, using census data.

The results of this study indicate that amongst all women of childbearing age (15-49 years), childlessness continues to increase over time. The high prevalence of childlessness is more pronounced among younger women aged 15–24. The analysis points out to the differentials of childlessness by population group. Across all population groups, childlessness is decreasing; however, the prevalence of childlessness among the white and Indian/Asian population groups is higher than among the black African and coloured population groups. Over time, the level of childlessness is higher among women aged 15–24 with secondary and higher education.

Among women aged 15-49 years, those who have never been married have higher levels of childlessness than women who are married. In 2001 and 2011, the proportion of women who are childless in all the age groups is more pronounced in urban areas than in rural areas. There is a slight decrease in the proportion of women aged 15–24 who are childless in Eastern Cape, North West and Free State. Over the period, employed women are more likely to be childless while unemployed women are least likely to be childless. In 2001 and 2011, childlessness is more apparent among managers and professional women whilst the lowest prevalence of childlessness in both periods is found among women employed in elementary occupations. Statistics on the number of women who are childless at the end of the reproductive age group (45–49) give an indication of lifetime childlessness in the country. Over time, cumulative fertility rates among women aged 45–49 declined whilst childlessness increased. White women aged 45–49 have the highest level of childlessness and lowest completed fertility rates while black/African and coloured women have the highest cumulative fertility rates and low levels of childlessness. Women with secondary and higher education have a lower completed fertility rate and higher prevalence of childlessness when compared to women with no education or primary education. Women aged 45-49 who have never been married or reside in urban

settings appear to have lower completed fertility rate and a higher level of childlessness than their counterparts.

When comparing childlessness of qualified and unqualified women aged 20–49, it was found that regardless of population group, qualified women aged 20–49 seem to have the highest levels of childlessness. Yet unqualified Indian and white women have the highest levels of childlessness compared to other unqualified women in other population groups. Childlessness is pronounced among employed qualified women aged 20–49. A high level of childlessness is distinct among qualified women who are in the field of mechatronics, whilst the lowest prevalence of childlessness is noticeable among women in the field of education and development.

Amongst both unqualified and qualified women, childlessness is more prevalent amongst women who are employed in the financial intermediation, insurance, and business industries. The lowest childlessness manifested differently across industries and age groups. It is more common in private households, construction and mining, and quarrying.

The study further explored socio-economic differences among qualified women who had children and qualified women who never had children. The highest proportion of qualified women who had children is apparent among women aged 30–34 and 35–39. Conversely, the proportion of qualified women who are childless is higher at earlier age groups (20–24 and 25–29). Across marital status, the highest proportion of qualified women with children (64,3%) are married, while the majority of qualified childless women (63,8%) have never been married.

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## Chapter 1: Overview

### 1.1 Introduction

Fertility in South Africa is one of the lowest in sub-Saharan Africa (Stats SA, 2010). According to the 1996 Census, the total fertility rate (TFR) in South Africa was estimated between 3,2 and 3,5 children per woman (Udjo, 1998; Sadie, 1998), and 2,8 in 2001 (Moultrie and Dorrington, 2004) and by 2011 it is estimated at 2,7 (Udjo, 2014, Stats SA 2015). Suggestions of a stalled fertility decline in specific regions in South Africa have been noted (Moultrie et al., 2008). Fertility postponement and increased childlessness are known contributors to overall fertility decline (Kohler, Billari and Ortega, 2002: 659-661).

National studies related to childlessness, age at first birth and parity progression in South Africa in recent years have not been available due to lack of data. The 2011 national census data provide valuable fertility information, i.e. information on the proportion of women who are childless and the age at first birth among women by 2011. Childlessness and fertility postponement describes a pattern of fertility, and is useful in better understanding the family formations and the factors influencing the fertility transition in South Africa.

Post-2001 there has been limited analysis of changes in fertility patterns in South Africa, particularly childlessness. The purpose of this paper is to determine the level of childlessness in South Africa over time, using census data. Voluntary childlessness refers to being without children, i.e. never having given a live birth due to use of methods of pregnancy prevention, whilst involuntary childlessness refers to being without children despite efforts to reproduce. Given the limitations of the data, childlessness in this paper is cumulative of both voluntary and involuntary childlessness. The objectives of the report are as follows. Firstly, it establishes the overall levels and trends of childlessness among women aged 15–49 using census 2001 and 2011 data. Secondly, childlessness by socio-demographic factors such as population group, educational attainment, marital status and geographic location (urban/non-urban) and province as well as employment status will be analysed. Thirdly, the influence of childlessness on the overall fertility decline and the determinants thereof will also be investigated. Finally, the paper will examine trends in childlessness among women with a range of qualifications and the report will establish the significant differences among qualified childless women and women who ever had children.

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## Literature review

In the context of low fertility, childlessness has become an important area of demographic research and has drawn the attention of many demographers and other social scientists. Traditionally, childlessness was mainly involuntary, occurring within a large family system (Morgan, 1991). Contemporary childlessness is mostly voluntary and is occurring in the context of a small family system. It therefore warrants attention, as it can be a potential factor to low levels of fertility in recent decades (Merlo and Rowland, 2000).

Over a woman's lifetime, her own assessment of whether or not she will have a child and the age at which she will begin childbearing, will be subject to changes in social and cultural prescripts and ideals as well as her own experiences. The change in the pattern of childlessness and postponement is indicative of increasing fertility control via contraceptive use for limiting and the choice in deciding when to bear children (DoH, 1998). Literature indicates that key socio-demographic factors such as population group, residence, education and marital status influence childlessness and fertility postponement and thus fertility levels within a country (Reinis, 1992; Bongaarts, 1978; Bongaarts, 2010).

Fertility postponement is among the factors that contribute to childlessness. Postponement of first birth may lead to involuntary childlessness if women underestimate age related declines in fecundity (Leridon, 2004). As childbearing gets pushed to increasingly later ages, women have a narrower window of time in which to complete their desired fertility because of biological limits. From a biological perspective, fecundity begins declining as early as the late 20s for women, with more dramatic reductions starting around age 35. Postponing fertility until the 30s, therefore, carries the risk of involuntary childlessness (Dunson et al., 2002).

Amongst the wide array of influences on the trend of childlessness, education and women's empowerment are key (Balk, 1994; Dyson and Moore, 1983). Both female educational attainment and labour force participation are factors that are identified as having a high correlation with childlessness (Hagestad and Call, 2007).

Since 1994, South Africa became internationally recognised for its relatively good performance in terms of common measures of gender equality and women empowerment (MDG, 2013). For example, the female share of enrolment in public higher education between 2010 and 2012 is over 61% for undergraduates and post-graduates alike (Equal education, 2014). Crimmins et al. (1991) revealed that younger educated women face a broader spectrum of choices in all

spheres of life and have different aspirations with regard to marriage and families, work life, self-sufficiency and life style than their mothers.

The prevalence of childlessness in South Africa has substantially increased in the recent decades (Stats SA, 2015). The proportion of childless women in the age group 35–39 has increased from 1.3 per cent in 1982 to 6 per cent in 2003. The increase was from 1.8 per cent to 4.8 per cent for women aged 45–49 years during the same period (United Nations, Department of Economic and Social Affairs, Population Division, 2013). While there is growing sentiment that modern lifestyles have led to a universal spread of those wishing to remain childless, it is also clear that women do not necessarily choose to remain childless (Kemkes-Grottenthaler, 2003). Factors such as infecundity and childbearing postponement can also account for childlessness (De Jong and Steenhof, 2000). Among most developed countries, only 10 per cent of women have no children, and in South Africa the percentage of childless women in their late forties approaches 5 per cent (World Fertility Report, 2009).

South Africa has made successful strides in empowering women through increased access to education (MDG, 2013). A correlation between education and childlessness is well documented worldwide (Weinberger, 1987). Fertility in the country has been declining over time, already reaching below replacement levels for specific sub-populations in South Africa, particularly among the white and Indian/Asian population groups (Stats SA, 2015). To better understand fertility over time in South Africa, it is important to study the reproductive behaviour of women from one generation to the next, identifying the influence of factors such as education and employment over time.

The extent of childlessness and causes of declining fertility have and are still receiving attention due to their impact on the demography of the country. Changes in fertility rates have significant implications for family formation as well as women's childbearing patterns. Higher education and income have been consistently linked to childlessness (Abma and Martinez, 2006). The explanation for high childlessness among highly educated women focuses on difficulty in reconciling work and family roles (Fokkema et al., 2008; Lind, 2008). The strong career orientation of female university graduates, the high opportunity cost (Liefbroer, 2005) as well as the postponement of family formation due to the long time spent in education have also been considered to be the main causes of childlessness. A stable career increases the likelihood of remaining childless among women. Köppen et al. (2007) indicated that the lack of a suitable

partner or a stable relationship is a central cause of childlessness in many countries of Western and Northern Europe.

Although fertility is steadily declining amongst black African women, there are still disparities in the fertility levels between the four population groups in South Africa (Udjo, 2014). To date, findings in childlessness by race are mixed. Studies in the United States found race to have no influence on the fertility preference of younger women (Kenkel, 1985), whilst Jacobson et al. (1988) found higher rates of childlessness among black African women than among white women. Conversely, Bloom and Trussel (1984) revealed that the effect of race is insignificant after controlling for education and place of residence.

In terms of the effects of geographical location on childlessness, Veevers (1980) found that childless women are more likely to reside in urban settings than non-urban settings. The study conducted among the states of India indicated that rural women have a higher percentage of childlessness when compared with urban women (Aiswarya and Moli, 2012). Spatial differences in South Africa indicate that fertility is higher among rural provinces than among urban provinces (Stats SA, 2015).

Makiwane (1998), investigating the pattern of fertility between married and never married women in Transkei, found that the TFR of married women (3,3) was greater than that of never married women. Makiwane indicated that unmarried women are more likely to use contraceptives than married women. Haskey (2013) in his study of cohabitation and partnership in Britain, demonstrated that the likelihood of women being childless is highest for those who had no partnerships, followed by those with one cohabitation, and lastly by those who had one marriage.

Research has also consistently shown that working women in high-status jobs are more likely to remain childless than women in lower-status jobs (Callan, 1986; Friedman et al., 1994). Ritchey and Stokes (1974) in their study established that the percentage of employed wives without children was higher by a factor of five than that of non-employed wives. In each age grouping, childlessness among employed wives exceeds that of unemployed wives.

It seems that the evidence on the relationship between female earnings and fertility is mixed. Differences in the empirical findings partially relate to different operational definitions of female income. Anderson (2000) used data on Swedish women's annual earnings during the 1980s and 1990s, and found a strong positive association between earnings and first-birth risks.

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However, using data for Norway and Finland, Rønsen (2004) finds a negative impact of female wages on fertility in Denmark. First-birth risks increase rapidly when women have reached the third income quintile, and this provides strong support for the idea that a sufficient female earning situation is a precondition for forming a family in Denmark.

Some professional occupations may be more compatible with family life than others. Women in a professional occupation may have greater access to spouses who facilitate family orientation than others do. Cooney and Uhlenberg (1989) in their study revealed that educated women in professional careers are more likely to be involved in parenting than women in non-professional categories of work.

The choice of education and the occupational opportunities thereof exert a considerable influence on the timing of the transition to motherhood (Ranson, 1998). The choice of field of education often reflects a woman's values and preference, which may include her attitude towards having children and how many (Hoem et al., 2006).

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## Chapter 2: Methodology

### 2.1 Data and scope

To better understand the level of childlessness in South Africa over time and the factors related to childlessness, fertility data from the 2001 and 2011 censuses were used. The category of childlessness in this paper captures all women in South Africa aged 15–49 who reported parity zero at the time of census. The question that yields this population was asked as follows: “Has the woman ever given birth to a child, even if the child died after birth?”. The proportion childlessness was determined by dividing the number of women who reported parity zero in each age group by the total number of women in the same age group.

### 2.2 Analysis

Univariate analysis was done to determine the levels of childlessness over time. Bivariate analysis was done to determine the relationship between the level of childlessness among women and socio-demographic factors such as age, marital status, population group, level of education, qualification, employment status, income, occupation, industry and province. The relationship between the women’s level of qualification and childlessness was also investigated using bivariate tables. Finally, analysis of the relationship between childlessness and delayed fertility was investigated using bivariate tabulations.

### 2.3 Limitations

The disadvantages in the study are that one cannot distinguish between involuntary childlessness (e.g. infertility), intended childlessness (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).

### 2.4 Assessment of parity unstated

The study used data on parity zero to establish childlessness; thus it is necessary to evaluate fertility data. Enumerators often do not record zero parity on the questionnaire to indicate that a woman has never had a child; instead the response is left blank. This is particularly prevalent among younger women. This results in ambiguous responses in that it will not be known whether blanks are unspecified or represent a childless woman (El-Badry, 1961). If a noticeably large proportion of women are classified under parity not stated, the exclusion of these women



will overestimate average parities. Conversely, if these women are included in the denominator, the inclusion will underestimate the average parities.

El-Badry's method was employed to establish whether unknown was in actual fact "true" unknown or parity zero. The method was applied to all women aged 15–49. The method is applied when the proportion of "not stated" at each age group is higher than 2%. On the other side, there should be strong linearity between the unstated parity and parity zero. Table 1 shows that in all age groups, the proportion of women with parity unstated exceeds 2%. According to Stats SA (2015), the results of the El-Badry correction method show a divergence in the proportion childlessness  $Z(i)$  and the proportion with parity not stated  $U(i)$  from the fitted line; this is suggestive that there is no linear relationship between childlessness and unstated parity; hence, missing parity is assumed to be parity zero.

**Table 1: Distribution of parity by age of women, Census 2011**

Parity	Age group						
	15–19	20–24	25–29	30–34	35–39	40–44	45–49
0	1 527 716	1 017 578	566 391	290 751	188 325	137 200	118 294
1	291 576	898 301	846 408	492 473	300 345	206 532	170 264
2	34 802	296 807	600 123	588 898	498 577	389 005	313 890
3	6 197	59 514	208 317	312 162	359 106	325 900	287 990
4	1 025	14 840	60 334	121 759	182 705	201 407	198 588
5	0	4 284	15 771	41 096	79 329	105 206	117 067
6	0	1 583	7 044	16 581	37 209	56 220	69 561
7	0	0	3 728	6 289	15 229	27 314	37 390
8	0	0	1 312	3 955	8 321	14 838	21 537
9	0	0	0	2 205	3 998	7 537	10 881
10	0	0	0	898	2 328	4 425	6 667
11	0	0	0	211	1 252	2 314	3 296
12	0	0	0	0	687	1 651	2 416
13	0	0	0	0	127	936	1 428
14	0	0	0	0	0	587	969
15	0	0	0	0	0	195	628
16	0	0	0	0	0	0	422
95	582 689	311 077	166 272	91 585	63 123	49 734	49 657
97	6 553	8 798	6 725	3 407	2 061	1 073	686
<b>Total</b>	2 450 558	2 612 782	2 482 425	1 972 270	1 742 722	1 532 074	1 411 631
<b>% parity unstated</b>	23,78	11,91	6,7	4,64	3,62	3,25	3,52
<b>% childless</b>	62,3	38,9	22,8	14,7	10,8	9	8,4

Source: Stats SA, 2015

## **Chapter 3: Childlessness among women aged 15–49 in South Africa**

### **3.1 Introduction**

A substantial component of the low national fertility levels is due to childlessness among the youngest cohorts across countries (Devolder, 2005). Even though the majority of women continue to become mothers at some point in their lives, increasing proportions of women choose to remain childless due to reproductive choice, and greater autonomy in ways not possible for previous generations (Gillespie, 2003).

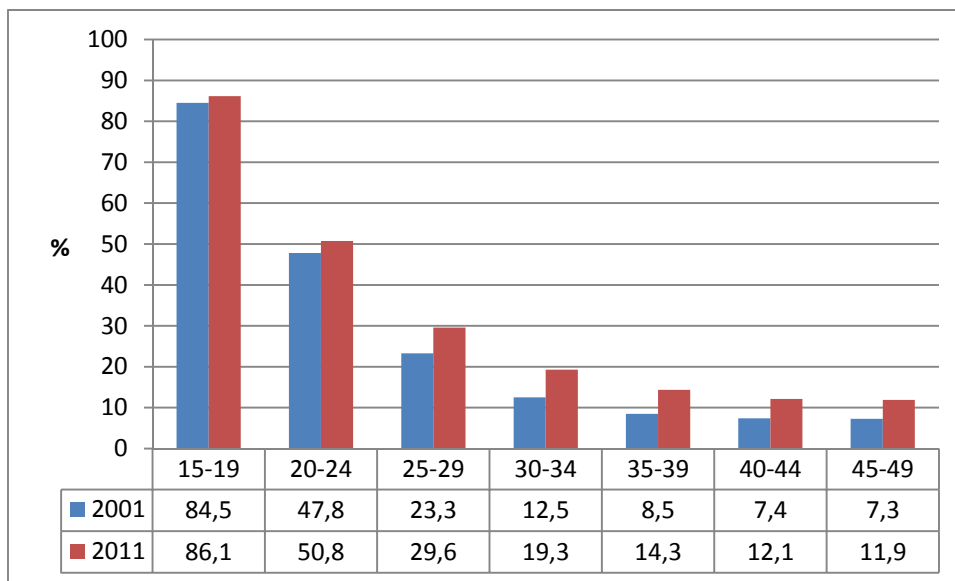
This chapter seeks to establish socio-demographic differentials of childlessness among all women aged 15–49 as well as to investigate the relationship between completed fertility rates and lifetime childlessness.

### **3.2 Socio-economic differentials and childlessness among women aged 15–49**

#### **3.2.1 Age**

As women aged 15 years and over age into older cohorts, the level of childlessness is expected to decline (Figure 1). The level of childlessness is highest among women aged 15–19. On average, over 80% of women aged 15–19 are childless. Early childbearing may adversely affect the health of the mother and infant, the economic wellbeing of families and marital stability (Zabin and Kiragu, 1998; Hobcraft, 1992). Increased childlessness at this age group importantly points to progress made in reproductive health programmes among the youth over time. In 2011, the level of childlessness among the older cohorts was substantially higher than that of 2001. The level of childlessness among the cohort aged 35–39 almost doubled between 2001 and 2011. This makes apparent the higher levels of childlessness that continue to prevail as women move towards the end of their reproductive lifespan by 2011 relative to 2001. Among women aged 45–49, the level of childlessness increased from 7% to 12% between 2001 and 2011.

**Figure 1: Childlessness among women aged 15–49 by age, Census 2001 and Census 2011**



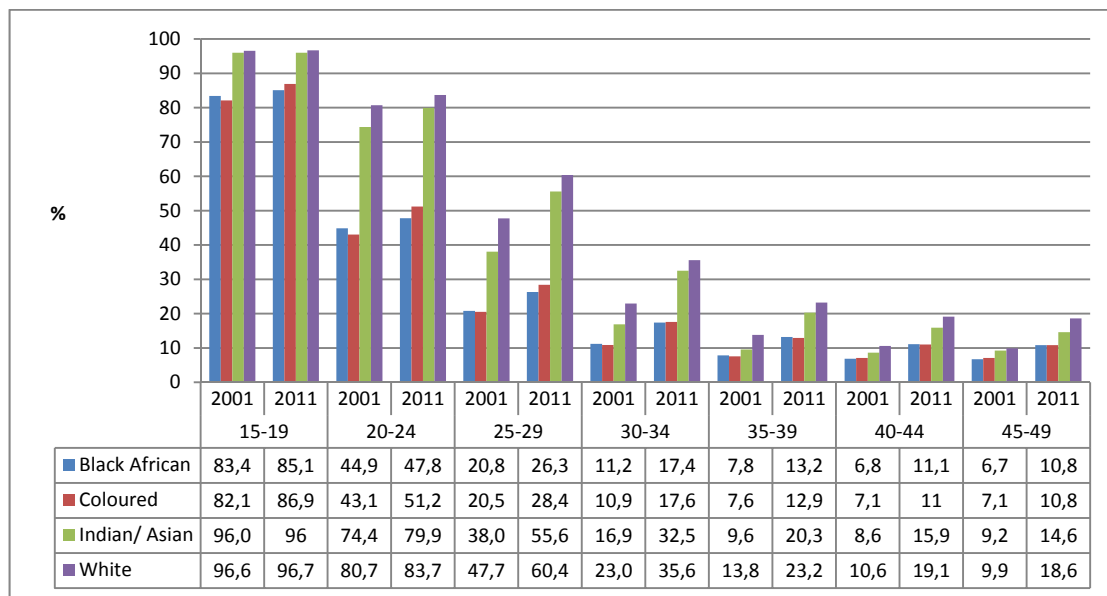
### 3.2.2 Population group

Figure 2 presents childlessness of women aged 15-49 by population group. In both 2001 and 2011 there seems to be a pattern of two fertility regimes, that of the white and Indian/Asian women who experience higher levels of childlessness across all ages, whilst the black African and coloured women indicate far lower levels of childlessness across all age cohorts of women in 2001 and 2011. However, among women aged 15–19, the levels of childlessness among black African and coloured teen women increased, more so when compared to other population groups between the years 2001 and 2011.

The widest gap in the level of childlessness between population groups was among women aged 20–29 years. Black African and coloured women have lower levels of childlessness at these ages, whilst Indian/Asian and white women have far higher levels of childlessness at these ages, indicating higher levels of delayed childbearing among Indian/Asian and white women when compared to black African and coloured women (Figure 2).

There seems to be two apparent fertility regimes in South Africa, that of the black African and coloured women and that of the white and Indian/Asian women. The difference between the two fertility regimes among women aged 30 and over was minimal in 2001; however, by 2011 the difference between the two fertility regimes widens and differs substantially up to the oldest cohort 45–49. It is clear that over time, two fertility regimes are becoming entrenched in South Africa, and the gap between the two seems to be widening.

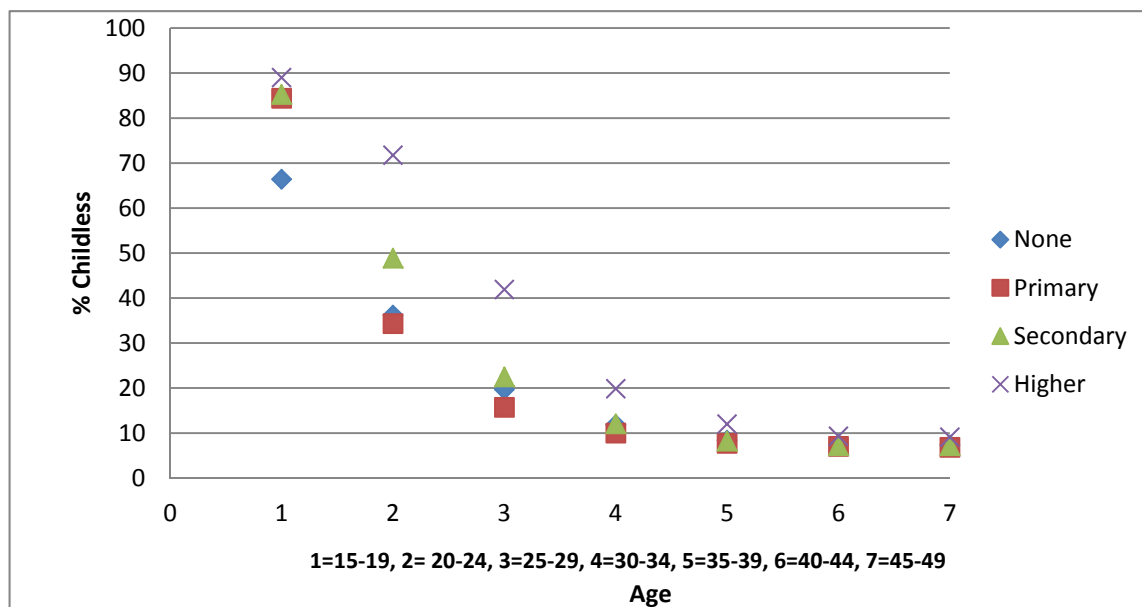
**Figure 2: Childlessness among women aged 15–49 by population group, Census 2001 and 2011**



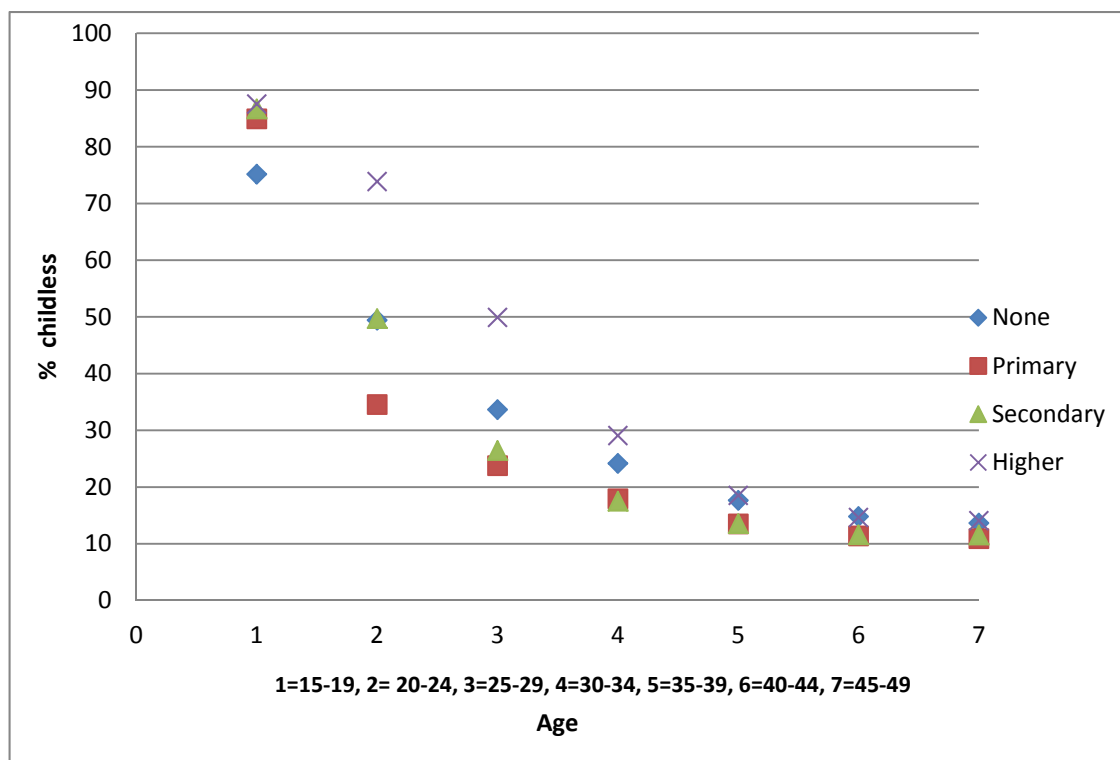
### 3.2.3 Educational attainment

In both 2001 and 2011, the pattern of increased childlessness with higher education is evident in Figure 3. The difference in the level of childlessness by educational attainment is apparent in younger ages 15–29, indicating that educational programmes implemented in an effort to improve the status and opportunities for women, will also influence the reproductive behaviour of women if women are targeted at an early age. The gap of childlessness between 2001 and 2011 is more pronounced for women with higher education aged 20–34. Beyond age 30, the difference in the level of childlessness by educational attainment is marginal. Given the fact that the level of childlessness among women reaching the end of their reproductive lifespan is generally lower, it is not surprising that regardless of educational attainment, most women would have at least given birth to their first child at this age.

**Figure 3a: Childlessness among women aged 15–49 by level of education, Census 2001**



**Figure 3b: Childlessness among women aged 15–49 by level of education, Census 2011**



### 3.2.4 Marital status

According to the Figure 4 below, in both 2001 and 2011 women aged 15–49 who have ever married have a lower level of childlessness when compared to women who were never married. Never married women include those women who report living together. The level of childlessness among women who have never married declined between 2001 and 2011, though marginally. In contrast, the level of childlessness among women who have ever married increased by almost 50% between 2001 and 2011.

**Figure 4: Proportion of childless women aged 15–49 by marital status, Census 2001 and Census 2011**

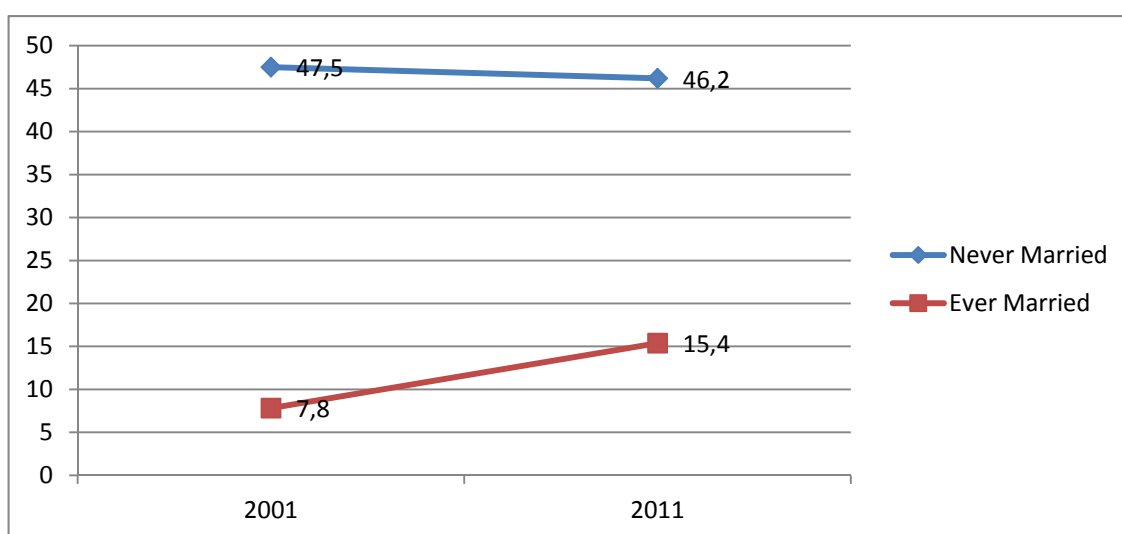
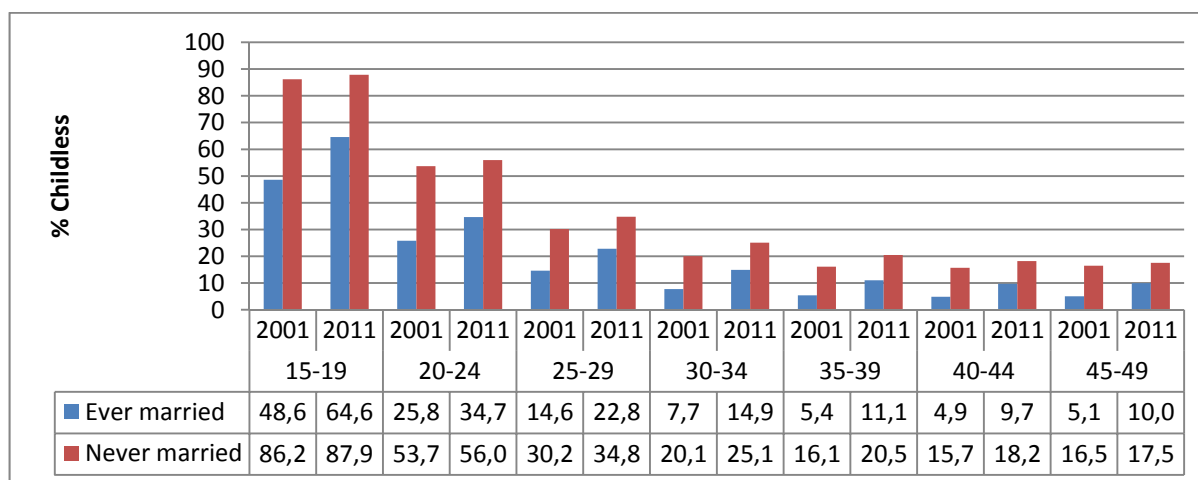


Figure 5 presents the proportion of childless women by marital status and age categories. In 2001 and 2011 across all categories of age, women who never married have higher levels of childlessness when compared to women who have ever married. However, within every age group, childlessness increased for both ever married and never married women over time. Teen women (15–19) who have never married experience the highest levels of childlessness. Teen women should ideally still be at school, not working, nor married and would by those circumstances have the higher level of childlessness. Childlessness among married teens (15–19) increased from 48,6% in 2001 to 64,6% in 2011, indicating a decline in fertility among married teens over time. The levels of childlessness amongst married women in specific age groups have doubled from 2001 to 2011. For example, childlessness amongst married women aged 30–34 and 35–39 increased from 7,7% in 2001 to 14,6% in 2011, and from 5,4% in 2001 to 11,1% in 2011, respectively. Over time, the inclination to pursue childbearing even within marriage is being delayed across all ages.

**Figure 5: Childlessness among women aged 15–49 by marital status, Census 2001 and 2011**



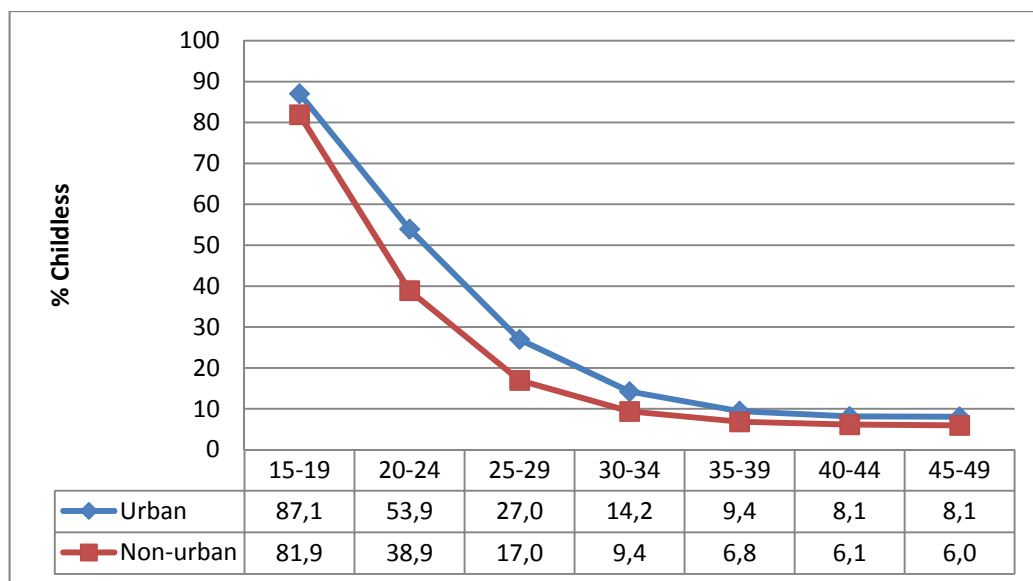
### 3.2.5 Geotype

Figures 6 and 7 illustrate that the level of childlessness is higher among women residing in urban communities than among those residing in non-urban communities in both 2001 and 2011. Amongst 15–19-year-olds there is no substantial difference in the level of childlessness between urban and non-urban women in both 2001 and 2011. In 2011, the differential gap in childlessness among women aged 15–19 in non-urban and urban areas is 4%.

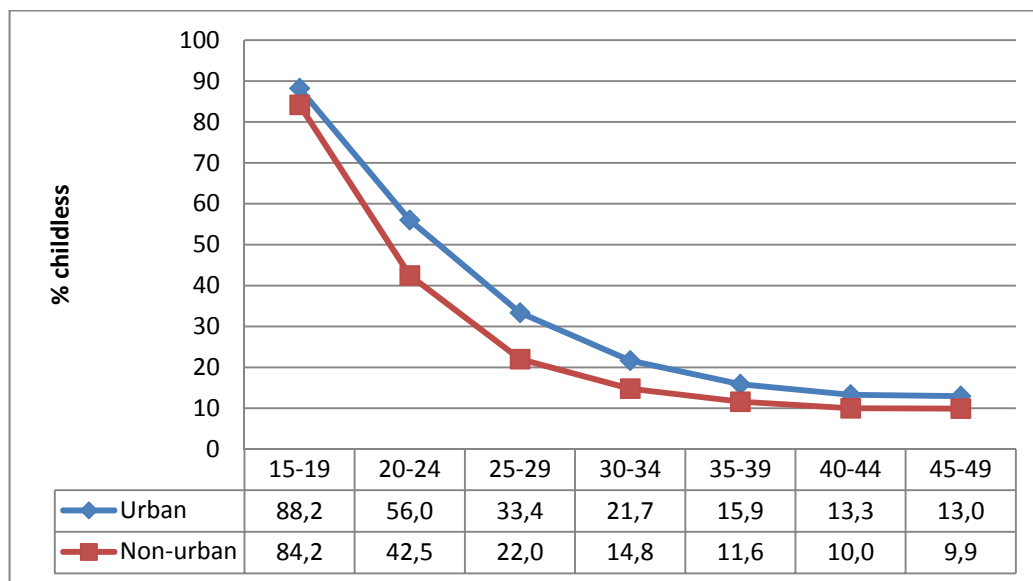
However, childlessness among women in the age group 20–29 varied substantially by geotype. By age 35 and over, the difference in the level of childlessness between urban and non-urban women was negligible.



**Figure 6: Childlessness among women aged 15–49 by geotype and age, Census 2001**



**Figure 7: Childlessness among women aged 15–49 by geotype and age, Census 2011**



### 3.2.6 Province

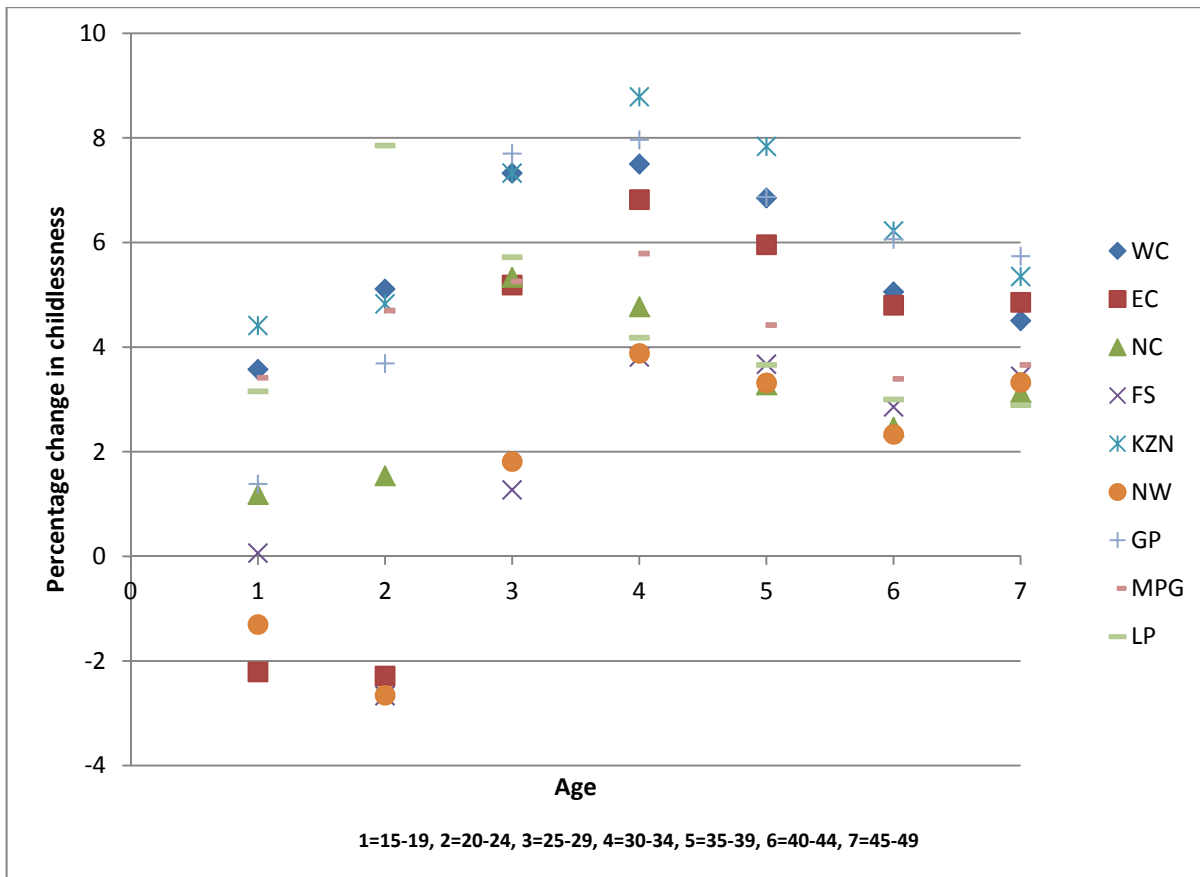
Despite the national increase in childlessness among women aged 15–49 in South Africa, regional trends of childlessness indicate stark differences in patterns of fertility across provinces in both 2001 and 2011.

Table 2 present the level of childlessness across provinces, whilst Figure 8 shows the percentage change in the level of childlessness among women by age between 2001 and 2011. Among women aged 15–19, the level of childlessness increased more noticeably in KwaZulu-Natal (4%) when compared to all other provinces, indicating an improvement in preventing teenage pregnancy within the province. However, the level of childlessness in the provinces of North West and Eastern Cape declined between 2001 and 2011 among teenagers, indicating a need for intensifying programmes related to teenage fertility in these provinces. Among women aged 20–24, the highest increase in childlessness occurred in Limpopo (8%), whilst childlessness declined in the provinces of North West, Eastern Cape and Free State. For the age cohort 25–29, childlessness increased across all provinces, especially among the provinces of Gauteng (8%), Western Cape and KwaZulu-Natal (both at 7%). As shown in Table 2, the level of childlessness increased significantly in KwaZulu-Natal among age cohorts 30–34 (9%), 35–39 (8%) and 40–44 (6%). Across all other age cohorts, the difference in the level of childlessness between 2001 and 2011 varied significantly across provinces; however, among the age cohort 45–49, the increase in childlessness varied from 3% to 6% between 2001 and 2011, across provinces.

**Table 2: Proportion of childlessness by age and province, 2001 and 2011**

Province	15–19		20–24		25–29		30–34		35–39		40–44		45–49	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
<b>WC</b>	84,6	88,0	52,2	56,6	27,7	35,1	15,0	22,1	9,2	15,7	8,4	13,2	8,4	12,4
<b>EC</b>	87,5	84,7	52,1	49,2	23,8	28,7	12,0	18,9	7,9	13,9	6,9	11,9	6,7	11,5
<b>NC</b>	83,4	84,3	41,0	41,3	17,4	23,4	9,2	13,2	7,5	11,0	7,7	10,9	7,6	11,3
<b>FS</b>	87,1	87,0	52,1	50,0	24,4	25,4	12,0	16,0	8,3	11,8	7,0	9,5	6,6	10,0
<b>KZN</b>	81,4	85,6	44,7	48,9	23,4	30,2	12,8	20,8	8,8	16,2	7,4	13,3	7,4	12,7
<b>NW</b>	86,7	85,1	48,1	44,9	21,1	22,6	11,0	15,1	8,3	11,5	7,6	10,2	7,0	10,8
<b>GP</b>	87,6	88,6	54,1	57,4	26,9	34,5	14,8	22,6	10,0	16,8	8,4	14,1	8,3	14,2
<b>MP</b>	80,2	83,4	40,5	45,0	19,7	24,8	10,6	16,4	8,1	11,9	7,5	11,0	7,4	10,6
<b>LP</b>	82,8	86,0	36,4	44,4	14,0	19,6	7,5	11,2	5,2	8,8	4,6	7,3	4,7	7,4

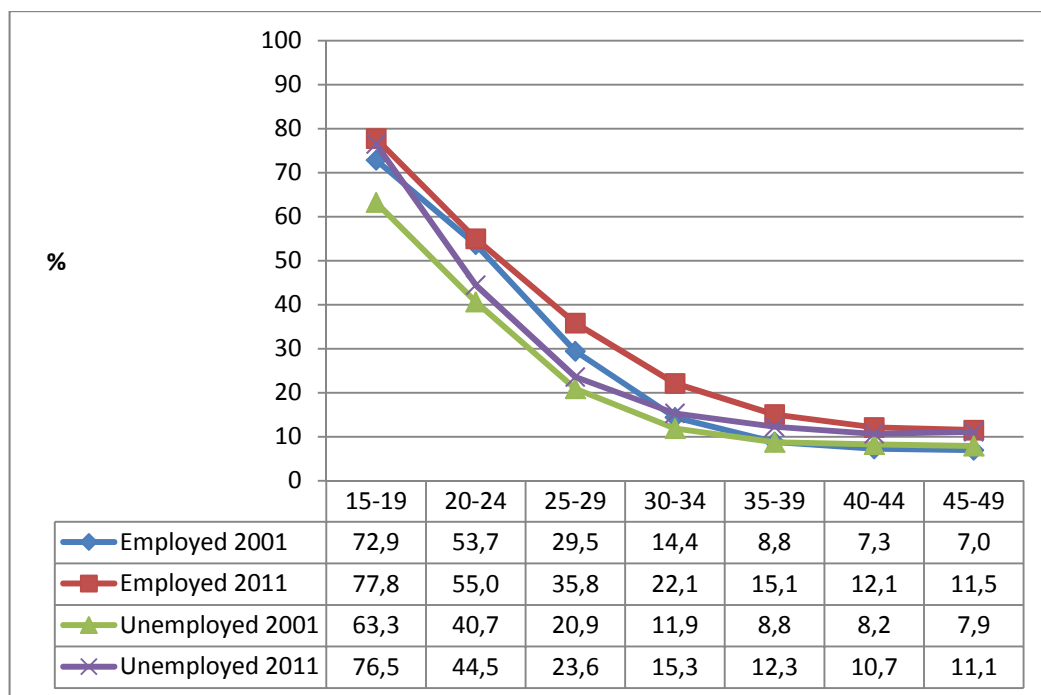
**Figure 8: Percentage change in childlessness between 2001 and 2011, across provinces**



### 3.2.7 Employment status

Figure 9 presents the levels of childless women by age and employment status over time. The level of childlessness among employed women increased between 2001 and 2011 for all ages, as did the level of childlessness among unemployed women between 2001 and 2011. For all ages, the level of childlessness is higher among employed women when compared to unemployed women in 2001 and 2011. As expected, the level of childlessness among employed and unemployed 15–19-year-olds was the highest, declining with age. Variations in childlessness were evident in ages 20–34, with employed women in 2011 having the highest level of childlessness when compared to unemployed and employed women in 2001 as well as unemployed women in 2011. Among women aged 35 and over there was little variation in the level of childlessness by employment status.

**Figure 9: Childlessness of all women aged 15–49 by employment status, 2001 and 2011**



### 3.2.8 Occupation

Findings from Table 3 indicate that over time and across all the age groups, childlessness was more apparent among managers and professional women. Between 2001 and 2011, there was a decline in the proportion of childless women aged 15–24 who were managers, professionals, technicians and clerks. However, among women aged 25 and over there was a consistent increase of childlessness over time and across all occupations. Overall, the lowest prevalence of childlessness in both periods across all age groups were found among women with elementary occupations, followed by women in skilled agriculture and women who were plant and machine operators.

**Table 3: Childlessness among women aged 15–49 by occupation and age, Census 2001 and 2011**

Occupation	15-19		20-24		25-29		30-34		35-39		40-44		45-49	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Manager	85,8	84,2	71,0	62,1	43,4	45,0	23,0	27,9	13,3	18,5	9,3	13,5	9,6	14,9
Professional	84,1	83,8	79,1	70,6	53,7	53,4	25,4	30,5	14,2	18,1	11,2	13,7	10,3	12,4
Technician	87,4	77,8	69,3	60,4	38,0	38,4	15,0	23,6	8,8	15,2	6,8	11,7	6,8	11,5
Clerk	85,9	80,1	65,5	61,6	34,1	39,4	15,7	23,5	8,8	15,9	7,0	13,4	7,1	12,5
Sales and services	83,8	80,1	57,8	55,7	28,6	34,2	14,1	21,5	9,1	14,6	7,0	12,6	6,9	10,9
Skilled agriculture	60,3	74,3	32,7	51,7	16,3	32,7	10,3	24,3	7,1	13,9	6,9	12,9	7,1	13,1
Craft and related trade	66,3	76,4	43,7	51,6	20,2	31,8	11,0	20,3	7,5	13,4	6,8	11,8	6,8	11,3
Plant and machine operator	74,0	77,0	42,1	50,1	20,2	33,4	10,1	19,6	6,9	14,0	6,5	10,3	8,2	11,2
Elementary	65,7	74,7	40,2	45,3	20,3	27,9	11,2	18,4	7,7	13,7	6,8	11,2	6,2	10,6

### 3.2.9 Industry

Table 4 shows the percentage of childlessness for all women aged 15–49 by industry within which they work. Across all the industries, younger women aged 15–19 were most likely to be childless in 2011. As expected, prevalence of childlessness is lower for older women across all the industries. Overall, the levels of childlessness are highest among women working in the financial intermediation, insurance and business sectors, followed by women across all ages working in the transport, storage and communication sectors. In 2011, women in the financial intermediation, insurance and business sectors have 80,5% and 60,6% of childlessness in the age group 15–19 and 20–24, respectively. The proportions of childlessness, specifically in the age group 15–34, are lowest among women working in agriculture, hunting, forestry and fishing. For instance, the proportions of childless women in the age groups 25–29 and 30–34 are 27% and 17,6%, respectively. Amongst older women aged 45-49, the lowest levels of childlessness begin to manifest in the electricity, gas and water supply industries.

**Table 4: Childlessness among all women aged 15–49 by industry, 2011**

Industry	15–19	20–24	25–29	30–34	35–39	40–44	45–49
Agriculture, hunting, forestry and fishing	66,5	43,1	27,0	17,6	14,4	11,0	11,5
Mining and quarrying	73,9	55,8	33,3	23,0	14,9	10,2	11,1
Manufacturing	79,3	55,1	34,8	21,7	14,7	12,9	11,0
Electricity, gas and water supply	77,7	61,0	39,6	21,1	13,8	14,7	10,3
Construction	79,9	51,6	33,0	21,2	13,0	12,1	11,0
Wholesale and retail trade	79,4	54,2	32,8	20,6	14,4	12,2	11,6
Transport, storage and communication	82,6	62,2	41,8	24,2	16,5	12,6	12,5
Financial intermediation, insurance, real estate and business	80,4	62,6	42,8	26,9	18,2	14,1	13,6
Community, social and personal services	78,1	58,3	39,2	23,1	14,9	11,6	11,2
Private households	75,1	44,8	28,2	18,6	13,8	11,3	10,7

### 3.3 Childlessness and completed fertility rate

#### 3.3.1 Introduction

Under conditions of universal marriage and no efforts to control fertility, the proportion of women who are childless at the end of the reproductive period provides a good measure of primary infertility (Frank, 1983). Existing literature on the influence of primary infertility on childlessness is well documented. Bongaarts and Potter (1983) estimate primary infertility at three per cent in the absence of pathological infertility. However, childlessness, as defined in this report, includes women with no children voluntarily and involuntarily. For the 21 countries of Africa for which Frank (1983) had data, levels of childlessness averaged 12%, and small areas in central Africa have displayed incredibly high levels of childlessness, i.e. 30–40% (Mammo and Morgan, 1986).

A rapidly increasing proportion of women remaining childless in their late twenties and early thirties appears to indicate that lifetime childlessness might be expected to increase sharply in the majority of industrialised countries (Sobotka, 2005). Postponing fertility until the thirties, therefore, carries the risk of lifetime childlessness. Thus, temporary childlessness may lead to involuntary childlessness if women underestimate age related declines in fecundity or overestimate the success of assisted reproduction therapies (Leridon, 2004; Maheshwari et al., 2008). Esteve et al. (2016) suggest that more recent childlessness may be related to the postponement of birth of the first child to a later age and to wait for the optimal family or material conditions to have child. When the average age at first birth drops to about 30 years of age, the

effects further delaying motherhood for even another year raises the childlessness level by 2 per cent among women (Esteve et al., 2016). However, the question remaining is how does the increased level of childlessness affect the overall fertility of a country. The aim of this section is thus to investigate the relationship between lifetime childlessness and completed fertility rates in South Africa.

Lifetime childlessness is defined as a woman having no live birth or no living children at the end of her reproductive lifespan (age 49) (WHO, 1991). This category, often used by demographers to indicate infertility, includes women who have never been pregnant, those who have suffered pregnancy losses, and those with no live births. If not clearly indicated otherwise, it may include women who currently have no living children but may have had one or more live births (Unisa, 1999). In the present analysis, 'lifetime childlessness' is considered as all 'zero parity' women aged 45–49.

Table 5 indicates the proportion of women childless over time by selected age categories. Between 2001 and 2011, childlessness increased from 9% in 2001 to 15% in 2011 among women aged 30 and over. Increased levels of childlessness at younger ages over time indicate an increase in delayed childbearing in South Africa. From the four categories, the highest increase is observed in women over 30 years of age. Notwithstanding the ten-year gap between Census 2001 and Census 2011, as shown in Table 6 there is a significant increase in the level of childlessness in this period.

**Table 5: Childlessness by selected age categories, Census 2001 and Census 2011**

Census	Age of woman			
	over 30	over 35	over 40	over 45
2001 childless %	9,20	7,80	7,34	7,27
2011 childless %	14,96	13,02	12,12	11,95

**Table 6: Percentage of childless women by selected age categories over time, Census 2001 and 2011**

	<b>Number of women 15–49 childless</b>	<b>%</b>	<b>Number of women 45–49 childless</b>	<b>%</b>
<b>2001</b>	4 196 693	33,23	81 811	7,27
<b>2011</b>	5 160 392	36,33	167 951	11,89

Recent trends of increased childlessness by age over time indicate increasing levels of delayed childbearing (Table 5). It is postulated that fertility delayed is in fact fertility forgone. The age at which a woman first gives birth can and often does influence the number of children a woman will conceive in her lifetime, i.e. completed fertility (Bumpass et al., 1978; Esteve et al., 2016; Sobotka et al., 2008). The completed fertility rate (CFR) refers to the fertility rate of women in the age group 45–49. Women who give birth at an early age experience a higher number of births in their childbearing lifespan than women who have their first birth later in life. Figure 7 indicates that, with an increase in age at first birth there is a decline in the mean number of children ever born. Women who had first given birth younger than 15 years of age, experienced a mean children ever born (CEB) of 4,18, whilst women who had first given birth at age 25 and over experienced a mean CEB of 2,55. Sobotka et al. (2008) state that a further shift toward later childbearing may lead to a decline in CFR.

**Table 7: Percentage distribution of women aged 45–49 by number of children ever born and mean CEB by age at first birth, Census 2011**

<b>Age at first birth</b>	<b>Parity distribution</b>							<b>Total %</b>	<b>Mean CEB</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7+</b>		
<15	12,0	15,0	17,1	17,1	13,4	10,2	15,3	<b>100,0</b>	4,18
15–17	9,3	15,4	20,9	19,6	13,7	8,8	12,2	<b>100,0</b>	4,04
18–19	8,3	17,8	24,1	20,1	12,8	7,7	9,2	<b>100,0</b>	3,83
20–21	9,4	22,3	25,8	18,5	10,6	6,3	7,1	<b>100,0</b>	3,55
22–24	11,8	29,3	26,4	15,4	8,0	4,3	4,7	<b>100,0</b>	3,16
25+	25,3	35,8	19,7	9,4	4,4	2,4	2,9	<b>100,0</b>	2,55

Stats SA, 2015



Not only does delayed childbearing inversely relate to completed fertility rate (CFR), but Table 8 also suggests that over time, completed fertility rate declined whilst childlessness increased. Nationally, the level of childlessness increased from 7,3% to 11,9 % between 2001 and 2011, whilst CFR decreased from 3,31 to 2,95 in the same period. To determine the extent to which this pattern is influenced by socio-demographic factors, Table 7 displays the relationship between childlessness at the end of childbearing years and completed fertility rates over time by socio-demographic characteristics. Across all population groups, there was a decline in CFR with an increase in childlessness, although there are differential levels in CFR and childlessness between population groups. Among women aged 45–49, white women have the highest level of childlessness and lowest completed fertility rate. Conversely, black African women have recorded completed fertility rates of almost 3,9 in 2001 and 3,2 in 2011, while their level of childlessness is the lowest (6,7%) in 2001 and 2011 (10,9%). The pattern of increased childlessness and declining CFR was exhibited across all educational categories; both urban and non-urban women as well as ever married and never married women. Women with a higher levels of education experienced the highest levels of childlessness of 9,1% in 2001 and 14,1% in 2011, whilst their CFR declined from 2,51 in 2001 to 2,17 in 2011. Married women and non-urban women experience higher CFR and lower childlessness when compared to their counterparts, i.e. never married and women residing in urban settings. For the various subgroups, those with higher childlessness indicated lower completed fertility rates. This pattern indicates a relationship between the level of childlessness and the completed fertility rate of women in the same cohort. Also, this pattern is influenced by socio-demographic factors such as population group, marital status, education and residence.

**Table 8: Lifetime childlessness and completed fertility rate (CFR) among women aged 45–49, Census 2001 and 2011**

	2001		2011	
	CFR	% childless	CFR	% childless
National	3,31	7,3	2,95	11,9
Black African	3,90	6,70	3,22	10,90
Coloured	3,01	7,07	2,60	10,80
Indian/ Asian	2,52	9,23	2,14	14,66
White	2,20	9,89	1,85	18,63
None	4,29	7,39	3,70	13,66
Primary	3,88	6,85	3,49	10,91
Secondary	2,97	7,18	2,73	11,56
Higher	2,51	9,07	2,17	14,07
Never married	2,80	15,05	2,66	16,84
Ever married	3,79	4,52	3,12	9,28
Urban	2,99	8,06	2,57	12,96
Non-urban	4,45	5,96	3,73	9,91

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## **Chapter 4: Childlessness among qualified and unqualified women aged 20–49**

### **4.1 Introduction**

This chapter focuses on childlessness among qualified and unqualified women aged 20–49. “Qualified women” in the analysis refers to women who acquired post-matric tertiary education while “unqualified women” are those with primary, secondary education, or no education. The age group 20-49 encompasses women, who in terms of South African school enrolment age, have already passed matric and acquired a tertiary qualification. In South Africa, the appropriate age for primary education is 7 to 13 years, whilst for secondary education it is 14 to 19 (MDG, 2013).

The previous chapters indicated that in the general population, childlessness increased from 2001 to 2011. Studies have shown that professional women have a higher rate of childlessness than women in the general population (Yoger and Vierra, 1983). Among professional women, marriage is delayed, number of children is lower and the rate of childlessness is higher (Astin, 1969). Higher education and labour force participation are also identified to have a high correlation with childlessness (Hagestad and Call, 2007).

This chapter is organised as follows: Firstly, the chapter identifies the levels of childlessness among qualified and unqualified women. Secondly, the chapter establishes whether there are significant differences among qualified women who ever had children and qualified women who are childless.

### **4.2 Distribution of qualified women by age**

Results in Table 9 indicate that across all qualifications in 2001 and 2011 the majority of qualified women aged 20–49 had attained diplomas and certificates. There is a slight increase in the proportion of women with diplomas and a bachelor’s degree between 2001 and 2011 across all age groups. Amongst qualified women aged 25–29, the proportion of women with certificates and diplomas increased from 7,6% in 2001 to 8,1% in 2011. Similarly, the proportion of women with a bachelor’s degree within the same age group increased from 2,1% in 2001 to 4,1% in 2011.

With regard to women with post-higher degrees, the table indicates a stable trend over the same period for all age groups.

**Table 9: Age distribution of women age 20–49 by qualification, Censuses 2001 and 2011**

Age group	Educational level								All women 20–49	
	2001				2011				2001	2011
	Diplomas and certificates	Bachelor's	Post-higher degrees	Unqualified	Diplomas and certificates	Bachelor's	Post-higher degrees	Unqualified		
20–24	118 106	23 757	7 409	2 040 072	156 380	57 537	7 411	2 458 569	2 189 344	2 679 897
25–29	154 638	42 318	17 160	1 820 056	202 833	103 810	17 631	2 192 360	2 034 172	2 516 634
30–34	133 041	42 566	20 703	1 544 921	173 586	80 147	18 814	1 720 258	1 741 231	1 992 805
35–39	105 010	38 376	16 567	1 475 601	154 645	78 506	21 039	1 504 231	1 635 554	1 758 421
40–44	799 36	31 470	14 523	1 250 950	125 589	74 172	19 544	1 326 985	1 376 879	1 546 290
45–49	559 86	22 424	10 023	1 037 428	94 624	57 296	16 825	1 255 798	1 125 861	1 424 543
Total	646 717	200 911	86 385	9 169 028	907 657	451 468	101 264	10 458 201	10 103 041	11 918 590

**Proportion of all women by age and level of education (%)**

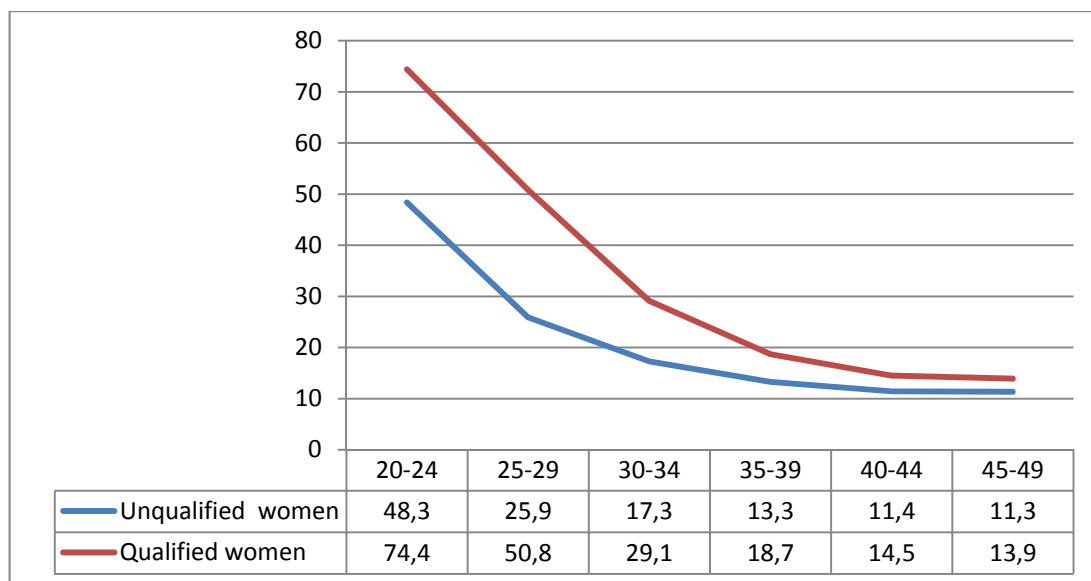
20–24	5,4	1,1	0,3	93,2	5,8	2,1	0,3	91,7	100	100
25–29	7,6	2,1	0,8	89,5	8,1	4,1	0,7	87,1	100	100
30–34	7,6	2,4	1,2	88,7	8,7	4,0	0,9	86,3	100	100
35–39	6,4	2,3	1,0	90,2	8,8	4,5	1,2	85,5	100	100
40–44	5,8	2,3	1,1	90,9	8,1	4,8	1,3	85,8	100	100
45–49	5,0	2,0	0,9	92,1	6,6	4,0	1,2	88,2	100	100
Total	6,4	2,0	0,9	90,8	7,6	3,8	0,8	87,7	100	100

### 4.3 Childlessness of qualified women by age

Figure 10 attests to prior discussions regarding the influence of education on childlessness. Higher education among women is significantly associated with childlessness. As the post-matric education of women increases, so does the prevalence of childlessness.

The difference in the levels of childlessness between qualified and unqualified women is most distinct between ages 20–34. The level of childlessness among qualified women was almost double the level of childlessness of unqualified women in the age groups 20–24 and 25–29. The variation in childlessness between qualified and unqualified women begins to narrow in the age group 35–39 and older. The decrease in the proportion of childless women by age is an indication of fertility postponement among qualified women. However, postponement of first birth may lead to involuntary childlessness if women underestimate age related declines in fecundity (Leridon, 2004).

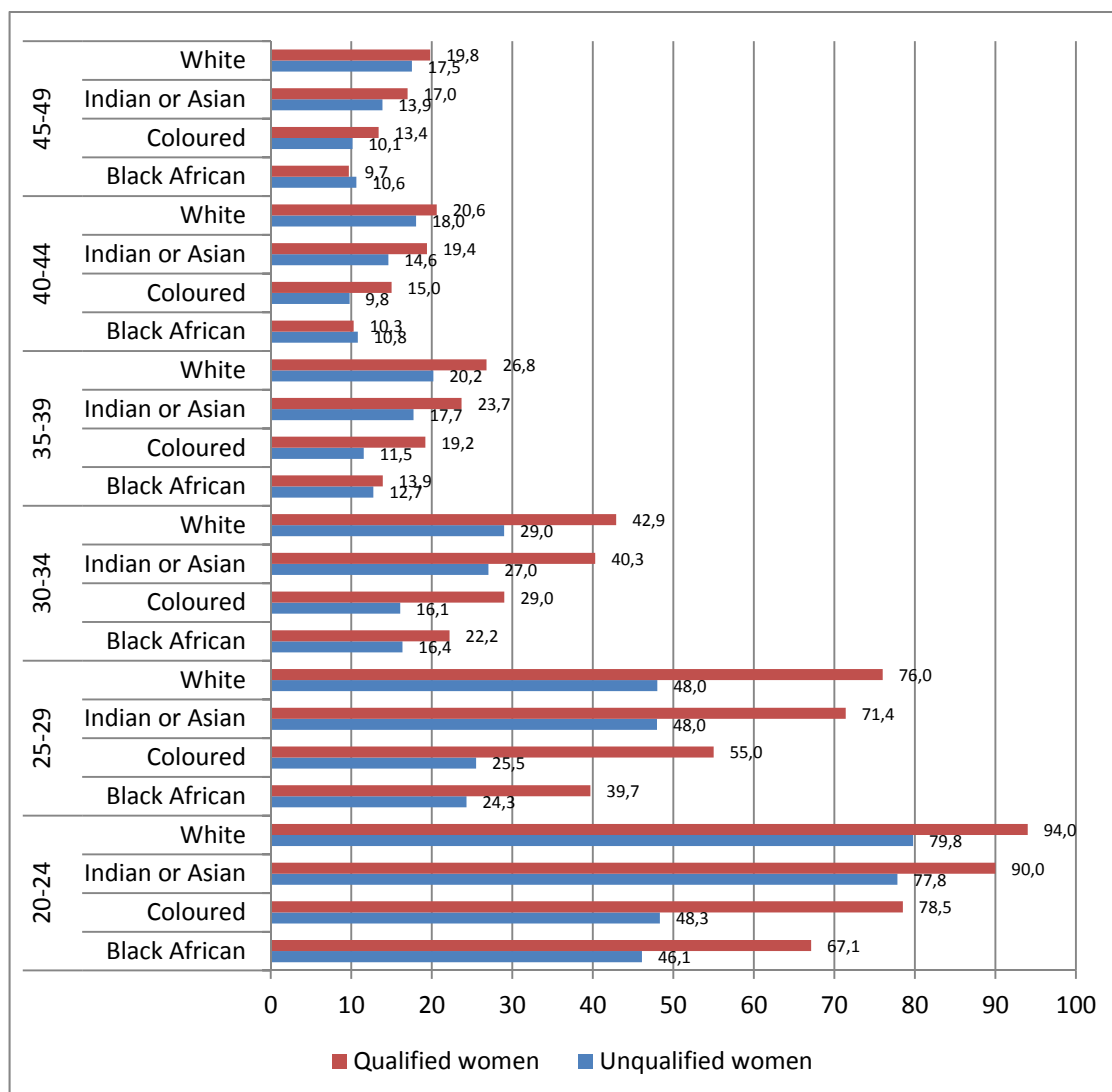
**Figure 10: Childlessness among women aged 20–49 by qualification level, 2011**



#### 4.4 Childlessness of women by qualification level and population group

The results in Figure 11 indicate that across all population groups and age groups, the prevalence of childlessness is higher among qualified women. However, Indian/Asian and white women have the highest prevalence of childlessness among qualified and unqualified women compared to black African and coloured women. Notably, in the youngest age group (20–24) of white and Indian/Asian women, there is a slight difference in childlessness among qualified and unqualified women, whilst a clear distinction in childlessness between qualified and unqualified women is apparent among black African and coloured women in the same age group. At age group 25–34, the variation in childlessness among qualified and unqualified whites and Indian /Asian women begins to be evident.

**Figure 11: Childlessness among women aged 20–49 by qualification level and population group, 2011**

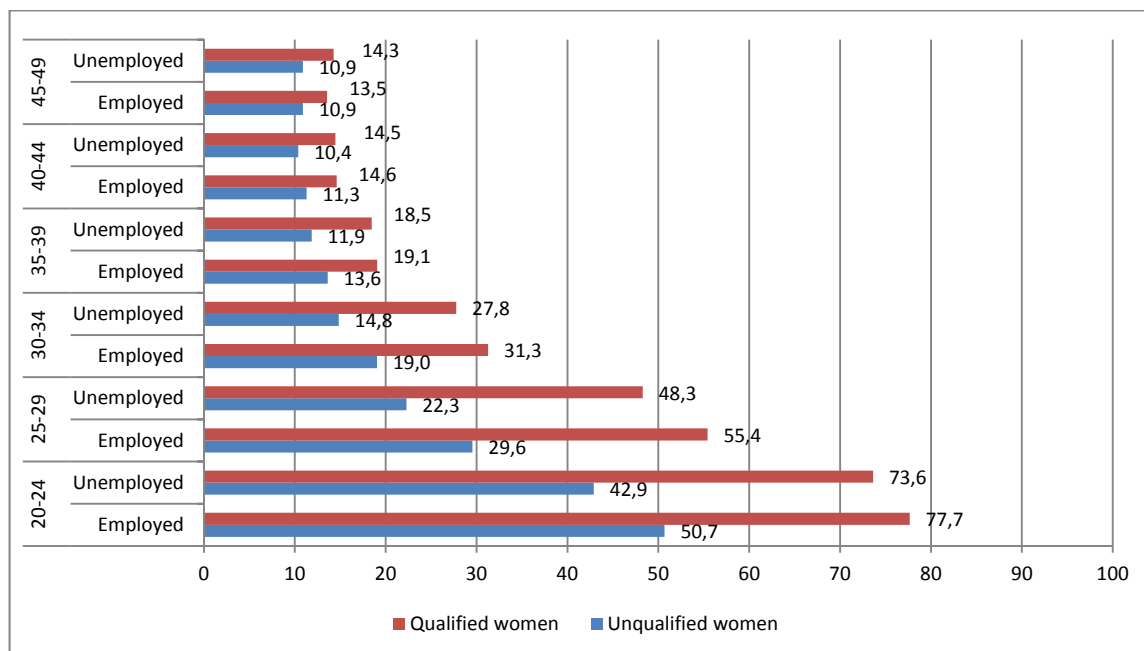


#### 4.5 Childlessness of women by qualification level and employment status

Figure 12 shows the level of childlessness between qualified and unqualified women by employment status for the year 2011. The results suggest that the prevalence of childlessness across all the age groups was higher among qualified women than among unqualified women, irrespective of their employment status. The wider gaps of childlessness between employed (qualified and unqualified) and unemployed (qualified and unqualified) women are observed in young women aged 20–29. For instance, among unemployed women aged 20–24, there is a marked 30,7% difference in childlessness between qualified and unqualified women. The gap of childlessness among employed qualified and unqualified women and unemployed qualified and unqualified women narrowed for women aged 35 and above. This could indicate that the desire

to have children amongst qualified women increases as age increases, irrespective of their employment status.

**Figure 12: Childlessness among women aged 20–49 by qualification and employment status, 2011**



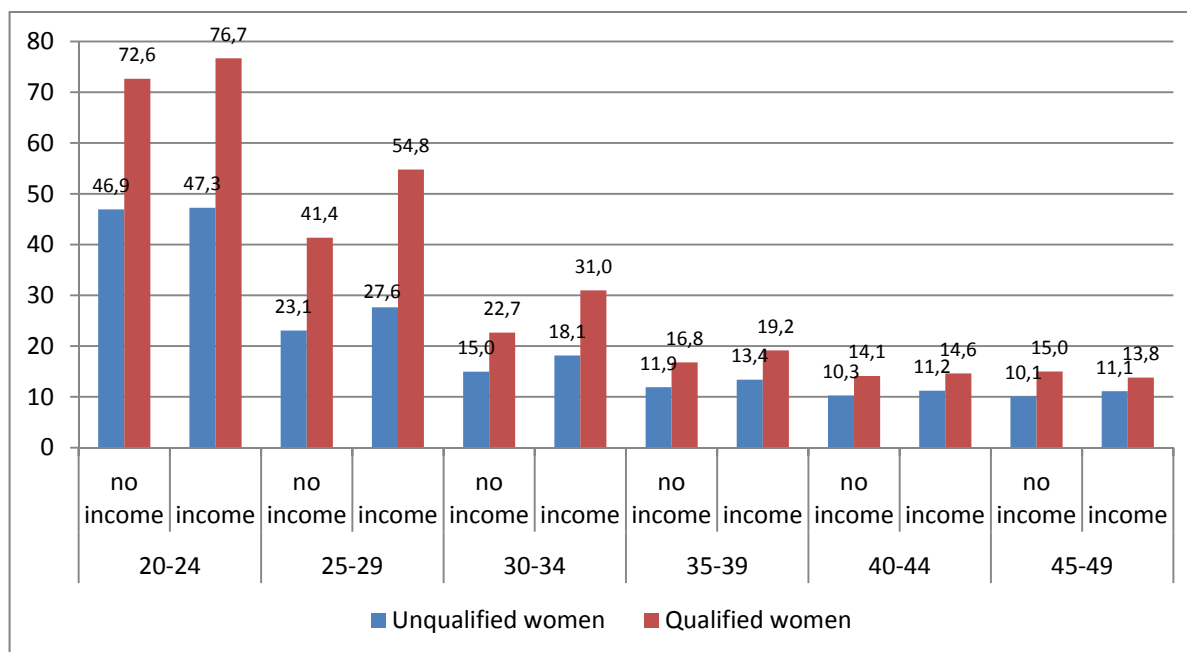
**NB: Official definition of employment was used in the analysis**

#### 4.6 Childlessness of women by qualification level and income

Figure 13 indicates that regardless of income, the prevalence of childlessness is higher for women with a qualification than unqualified women. Across all age groups, qualified women with an income had a higher childlessness prevalence than those without an income. The wider gap of childlessness between qualified and unqualified women with an income is more pronounced in women at younger ages 20–24 (30%). The major difference of childlessness among qualified women with an income and those with no income of 13,4% was observed in women aged 25–29. The gap between qualified and unqualified women starts to converge as women get older. Further, the prevalence of childlessness of unqualified women with an income and those with no income is almost consistent across all age groups. The pattern suggests that for older women aged 40 and older, childlessness among qualified women is not influenced by income.



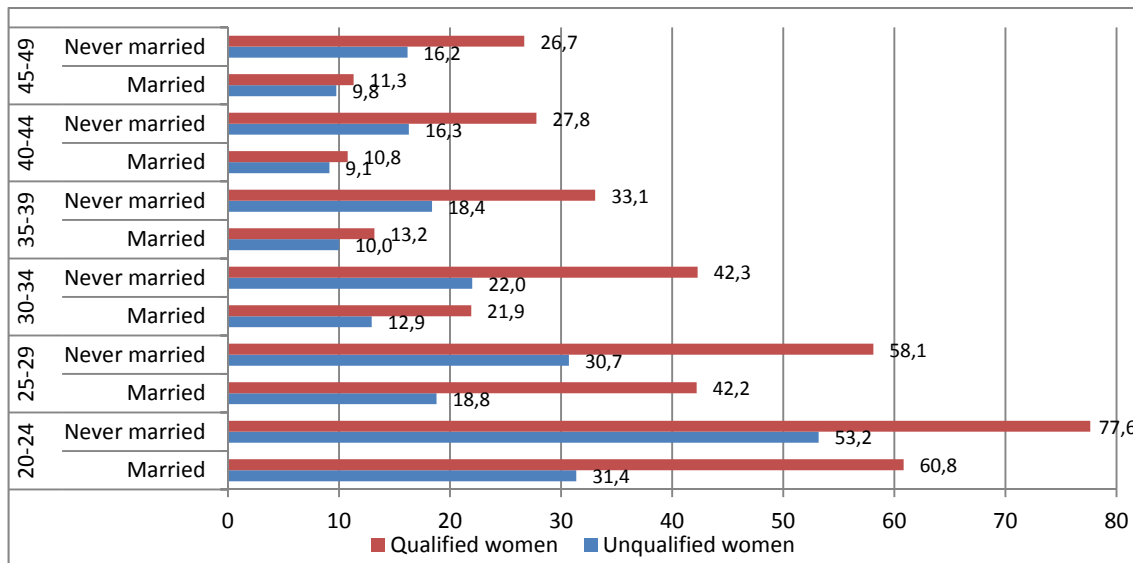
**Figure 13: Childlessness among women aged 20–49 by qualification and income, Census 2011**



#### 4.7 Childlessness of women by qualification level and marital status

Figure 14 indicates that in 2011, across all marital categories and between all the age groups, qualified women experienced higher levels of childlessness when compared to unqualified women. Across all age groups, never married qualified women appear to have higher levels of childlessness compared to married women. In 2011, childlessness among qualified married women between the ages 20–24 and 25–29 was almost twice that of married unqualified women. This indicates that although marriage bears an influence on childbearing (especially amongst younger women), the qualifications of the women act as a barrier towards early childbearing.

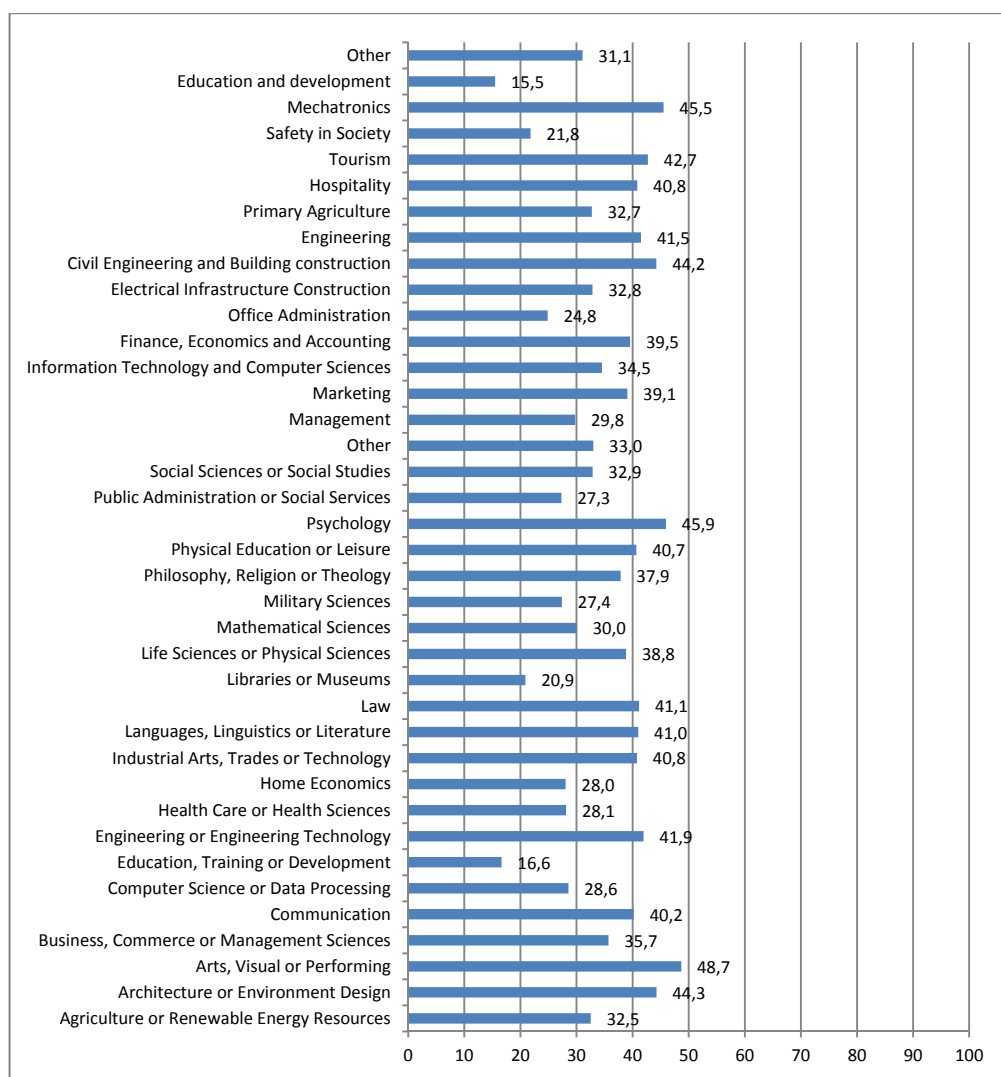
**Figure 14: Childlessness among women aged 20–49 by qualification and marital status, 2011**



**4.8 Childlessness of women by qualification level and field of study**

Figure 15 displays the results of childlessness by field of study for the year 2011. Childlessness was noticeably high among qualified women who trained in visual or performance arts (49%), psychology (46%) and mechatronics (45%). Women in the field of civil engineering and building construction follow with a prevalence of 44%. Women in the field of education and development experienced the lowest prevalence of childlessness (16,6%). These were followed by childless women in the field of libraries, museums and safety in society with a prevalence of less than 21%.

**Figure 15: Childlessness among qualified women aged 20–49 by field of education, 2011**



#### 4.9 Childlessness of women by qualification level and industry

Table 9 below presents levels of childlessness among women who are qualified and unqualified by industry within which they work. Results indicate significant differences in childlessness by type of industry. Overall, the level of childlessness is highest among women working in the financial intermediation, insurance and business sectors, followed by women working in transport, storage and communication across all ages. Within the age groups 20–34, qualified women present the highest level of childlessness when compared with their unqualified counterparts. There is variation in low childlessness across industries and within age groups of qualified and unqualified women. Looking at unqualified women in the age group 20–24, the lowest level of childlessness was evident in women working in agriculture, hunting, forestry and fishing; similarly, the lowest levels among qualified women is witnessed in women working in the field of electricity, gas and water supply. Among qualified women aged 25–29, childlessness

is low in women employed in the mining and quarrying industry, with a prevalence of 42%, while in age group 30–34, the lowest childlessness of 21,6% is noticeable in women working in private households. Across the industries, childlessness among qualified and unqualified women begins to decline substantially from age group 30–34 and above. This is illustrated by a decline of 25% between qualified women in the age groups 25–29 and 30–34 who are in the agriculture, hunting, forestry and fishing industry.

#### **4.10 Childlessness of women by qualification level and occupation**

Table 10 below indicates occupational category differentials among qualified and unqualified women in 2011. Although the prevalence of childlessness is generally higher among qualified as opposed to unqualified women across all occupations, childlessness in both categories was more prevalent amongst women aged 20–24 and 25–29 who were managers and professionals. Respectively, about 70,6% and 80,8% of unqualified and qualified women in the age group 20–24 and 53% and 60,9% in the age group 25–29 were professionals.

Qualified women between the ages 30–34 (38,6%) and 40–44 (14%) who were skilled in agriculture had the highest proportion of childlessness. On the other hand, 18,5% of unqualified women who are managers in the age group 35–39 and 14,9% of women aged 45–49 recorded the highest levels of childlessness. Across all occupations, unqualified professional women recorded the highest prevalence of childlessness of 30,5% and 13,7% in the age groups 30–34 and 40–44, respectively. Amongst unqualified women, low levels of childlessness across the age groups were observed in women with elementary occupation, except for unqualified women aged 40–44 years. Among qualified women aged 20–24, the lowest level of childlessness was revealed in women working in agriculture, while in women aged 25–29 the lowest level of childlessness (45%) is predominant among technicians and those in the working in the agriculture industry. In the age groups 30–34 and 45–49, low childlessness was prevalent amongst women in elementary occupations, whilst the lowest levels of childlessness of 13% and 9,5% are found respectively among qualified women aged 35–39 and 40–44 who are plant and machine operators.

**Table 10: Childlessness among women aged 20–49 by qualification and industry of work, Census 2011**

Industry	20–24		25–29		30–34		35–39		40–44		45–49	
	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women
Agriculture, hunting, forestry and fishing	43,1	72,5	27,0	50,7	17,6	26,0	14,4	16,2	11,0	12,3	11,5	7,6
Mining and quarrying	55,8	71,5	33,3	41,7	23,0	28,9	14,9	11,4	10,2	11,7	11,1	6,2
Manufacturing	55,1	74,5	34,8	54,5	21,7	28,7	14,7	17,6	12,9	15,7	11,0	11,7
Electricity, gas and water supply	61,0	65,3	39,6	42,7	21,1	24,8	13,8	14,2	14,7	13,3	10,3	10,3
Construction	51,6	72,7	33,0	49,2	21,2	26,8	13,0	13,9	12,1	14,3	11,0	11,2
Wholesale and retail trade	54,2	73,5	32,8	47,7	20,6	27,5	14,4	17,1	12,2	12,9	11,6	13,3
Transport, storage and communication	62,2	73,9	41,8	52,6	24,2	29,2	16,5	18,3	12,6	10,8	12,5	12,4
Financial intermediation, insurance and business	62,6	79,6	42,8	59,8	26,9	33,3	18,2	19,9	14,1	15,1	13,6	14,0
Community, social and personal services	58,3	72,8	39,2	49,9	23,1	26,4	14,9	14,5	11,6	10,4	11,2	9,6
Private households	44,8	68,2	28,2	45,3	18,6	21,6	13,8	16,5	11,3	11,6	10,7	8,4

**Table 11: Childlessness among women aged 20–49 by age, qualification and occupation, Census 2011**

Occupation	20–24		25–29		30–34		35–39		40–44		45–49	
	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women
Manager	62,1	79,5	45,0	60,4	27,9	33,9	18,5	21,1	13,5	13,6	14,9	14,2
Professional	70,6	80,8	53,4	60,9	30,5	32,5	18,1	17,1	13,7	12,1	12,4	10,7
Technician	60,4	69,1	38,4	45,0	23,6	24,7	15,2	14,3	11,7	10,5	11,5	9,6
Clerk	61,6	74,0	39,4	50,7	23,5	27,4	15,9	16,4	13,4	13,2	12,5	11,8
Sales and services	55,7	74,3	34,2	48,6	21,5	27,3	14,6	16,5	12,6	13,4	10,9	10,6
Skilled agriculture	51,7	65,4	32,7	45,0	24,3	38,6	13,9	22,4	12,9	14,0	13,1	9,7
Craft and related trade	51,6	75,4	31,8	46,4	20,3	27,6	13,4	13,6	11,8	10,8	11,3	10,4
Plant and machine operator	50,1	72,4	33,4	46,5	19,6	23,9	14,0	13,0	10,3	9,5	11,2	12,0
Elementary	45,3	68,2	27,9	47,0	18,4	23,1	13,7	14,9	11,2	12,1	10,6	9,4

#### **4.11 Childlessness of women by qualification level and province**

Table 12 shows provincial variation in the location of qualified and unqualified childless women across South Africa. Provincial analysis indicates that amongst qualified and unqualified women, the highest proportion of childless women reside in Western Cape and Gauteng. However, in the age group 35–39, unqualified women in KwaZulu-Natal have the highest prevalence of childlessness. Across all the provinces, the widest difference in childlessness between qualified and unqualified women of 33% and 38% is observed among women aged 20–24 and 30–34 respectively in the Western Cape. In contrast, the lowest level of childlessness among qualified and unqualified women is found in women who reside in Limpopo, except for unqualified women aged 20–24. The lowest proportion (39,8%) of women who are childless live in Northern Cape. The spatial pattern of childlessness revealed in this analysis corroborates with the fertility patterns and behaviour in these provinces.

**Table 12: Childlessness among women aged 20–49 by qualification and province, Census 2011**

Province	20–24		25–29		30–34		35–39		40–44		45–49	
	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women	Unqualified women	Qualified women
WC	53,0	85,9	29,3	66,9	18,3	41,5	13,6	24,9	11,5	21,2	11,2	17,9
EC	47,9	67,5	26,2	46,3	17,3	25,5	13,1	16,0	11,5	12,1	11,1	11,1
NC	39,8	74,5	21,0	46,7	11,7	29,5	10,1	12,1	10,1	12,2	10,1	14,0
FS	47,9	74,2	22,5	47,3	14,7	25,8	10,9	16,3	9,0	10,9	9,6	10,7
KZN	47,2	70,8	28,0	47,2	19,7	27,6	15,6	18,7	12,8	14,5	12,1	13,9
NW	43,0	72,6	20,7	41,0	14,2	20,7	11,1	12,7	10,0	8,3	10,6	8,5
GP	53,8	78,3	28,8	54,8	19,9	31,2	15,4	21,2	13,2	16,8	13,4	17,1
MP	43,7	61,5	23,1	35,9	15,5	20,8	11,5	11,4	11,0	10,6	10,5	9,8
LP	43,1	60,4	17,7	31,3	10,5	13,5	8,2	9,5	7,0	6,5	7,0	7,2



## **Chapter 5: Socio-economic differentials of qualified women (aged 20–49) by fertility status**

### **5.1 Introduction**

One of the objectives of the study was to determine if there are significant differences between women who reported having children and women who reported having no children. The differences were established using socio-economic characteristics of qualified women such as age, marital status, population group, level of education, employment status, income, occupation, industry and province. Bivariate analysis was performed using data from census 2011 to achieve this.

### **5.2 Qualified women by socio-demographic differentials and fertility status**

#### **5.2.1 Age**

Table 13 indicates the proportion of women by fertility status and nine socio-economic characteristics. The mean age at childbearing in South Africa is 22 (Stats SA, 2015); however, fertility of qualified women reaches its peak among women who had children between the ages of 30–34 and 35–39 (20% and 22%, respectively). The proportion of qualified childless women is the highest with an average of 32% amongst women aged 20–24 and 25–29.

#### **5.2.2 Marital status**

Marital status shows a significant difference of fertility amongst qualified women (20–49). The majority of qualified women who had children are married (64%) compared to 34% of qualified married women with no children. A noticeable proportion (64%) of qualified women with no children has never been married. On the other hand, only 33,8% of qualified childless women are married.

#### **5.2.3 Population group**

The majority of qualified women with children are black Africans (66%), followed by whites (23%). Similarly, the highest proportion of qualified childless women are black Africans (51%), followed by whites (36%). Interestingly, the proportions of qualified women with and without children are lowest amongst the coloured and Indian/Asian population groups. Almost 6% and 5% of qualified women who reported children ever born and 6% and 8% of women without children are coloured and Indian/Asian, respectively.

### **5.2.4 Level of education**

About 65% of qualified women who ever had children have diplomas and certificates whilst 57% of qualified childless women have the same qualifications. With regard to a bachelor's degree, the proportion (36%) of qualified women who are childless is slightly higher than that of qualified women who reported children ever born (28%). In addition, 7% of qualified women with children ever born; and 7 % without children ever born had post-higher degrees (Refer to table 13).

### **5.2.5 Employment status**

There is a slight difference between employed qualified women who ever had children and employed qualified childless women. About 64% and 69% of qualified women without children and qualified women who have borne children are employed. This means that 30,9% of women with children and 35,7% of qualified women without children are unemployed.

### **5.2.6 Income**

As far as income is concerned, 77% of qualified women who have children earn an income compared to 71,2% of childless women who earn an income. About 23% of qualified women who have children do not earn an income relative to 28,8% of childless women who do not earn an income.

### **5.2.7 Occupation**

Across all occupations, there is no substantial difference between the proportion of qualified women who are childless and qualified women with children. For instance, 22,2% of qualified women who have children are professionals, whilst 24,1% of qualified women who are childless are professionals. Similarly, 9,1% of qualified women with children and 11,7% of qualified women with no children are managers. It is worth noting that the proportions of qualified women with and without children across all occupations are the lowest in the skilled agricultural industry, with less than 1% in each category.

### **5.2.8 Industry**

The largest proportion of childless women (42,5%) and women who reported children (49,8%) are located within the community, social and personal services industry. Variations between qualified women with children and qualified childless women are evident within the construction, wholesale and retail trade and financial intermediation, insurance, real estate and business

industries. Within the financial intermediation, insurance, real estate and business industry, the proportion of qualified women who reported children ever born is only 1,8%, while the proportion of qualified women without children are 23,1%. The electricity, gas and water supply industry seems to have the lowest proportion of women (1%) both with children and without children.

### **5.2.9 Province**

The leading province among qualified women with children and without children is Gauteng with 37,8% and 44,6%, respectively. In addition, it is noticeable that Northern Cape ranks last with 1% amongst qualified women who reported children ever born and those who are childless. Overall, there is a slight difference in the proportion of women with children and without children across all provinces, except for Gauteng, Western Cape and Limpopo. The largest gap between qualified women with children and without children is found in Gauteng is 7%, followed by Western Cape (5%) and Limpopo (4%).

**Table 13: Percentage distribution of qualified women by fertility status and socio-economic characteristics, Census 2011**

Characteristics		Children ever born	
		Yes	No
Age	20–24	56 260 (6,0)	133 310 (31,6)
	25–29	158 489 (16,8)	139 678 (32,2)
	30–34	191 990 (20,4)	67 042 (15,9)
	35–39	205 461 (21,8)	38 496 (9,1)
	40–44	186 084 (19,7)	24 952 (5,9)
	45–49	143 914 (15,3)	17 846 (4,2)
Marital status	Married	605 941 (64,3)	142 409 (33,8)
	Never married	269 310 (28,6)	268 829 (63,8)
	Widower/widow	20 733 (2,2)	1 696 (0,4)
	Divorced	46 215 (4,9)	8 391 (2,2)
Population group	Black African	624 182 (66,2)	213 208 (50,6)
	Coloured	55 775 (5,9)	26 465 (6,3)
	Indian or Asian	45 169 (4,8)	31 826 (7,6)
	White	217 073 (23,0)	149 825 (35,6)
Level of education	Certificates and Diplomas	612 563 (65,0)	238 215 (56,5)
	Bachelor's degrees	266 265 (28,3)	153 110 (36,3)
	Post-higher degrees	63 371 (6,7)	29 999 (7,1)
Employment status	Employed	650 227 (69,1)	270 833 (64,3)
	Unemployed	291 227 (30,9)	150 051 (35,7)
Income	Yes income	725 281 (77,0)	300 137 (71,2)
	No income	216 918 (23,0)	121 188 (28,8)
Occupation	Professional	157 486 (22,2)	70 392 (24,1)
	Manager	64 684 (9,1)	34 001 (11,7)
	Technician	172 846 (24,3)	58 128 (19,9)
	Clerk	116 879 (16,5)	52 122 (17,9)
	Sales and services	67 559 (9,5)	29 228 (10,0)
	Skilled agriculture	2 976 (0,4)	1 357 (0,5)
	Craft and related trade	32 447 (4,6)	12 597 (4,3)
	Plant and machine operator	23 815 (3,4)	8 423 (2,9)
	Elementary	71 343 (10,0)	25 546 (8,8)
Industry	Community, social and personal services	353 682 (49,8)	123 968 (42,5)
	Mining and quarrying	10 220 (1,4)	3 820 (1,3)
	Manufacturing	40 966 (5,8)	18 828 (6,5)
	Electricity, gas and water supply	6 736 (0,9)	2 459 (0,8)
	Construction	23 221 (11,1)	9 356 (3,2)
	Wholesale and retail trade	78 984 (4,4)	34 765 (11,9)
	Transport, storage and communication	31 281 (16,8)	14 900 (5,1)
	Financial intermediation, insurance, real estate and business	119 427 (1,8)	67 482 (23,1)
	Agriculture, hunting, forestry and fishing	12 687 (4,6)	4 818 (1,7)
	Private households	32 511 (4,6)	11 255 (3,9)
Province	Gauteng	355 765 (37,8)	187 964 (44,6)
	Western Cape	103 831 (11,0)	70 629 (16,8)
	Eastern Cape	89 447 (9,5)	29 372 (7,0)
	Northern Cape	11 483 (1,2)	4 294 (1,0)
	Free State	38 840 (4,1)	15 817 (3,8)
	KwaZulu-Natal	145 414 (15,4)	60 177 (14,3)
	North West	44 530 (4,7)	14 010 (3,3)
	Mpumalanga	64 184 (6,8)	18 336 (4,4)
	Limpopo	88 706 (9,4)	20 725 (4,9)

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## Chapter 6: Discussion and conclusion

Despite variations in socio-economic differentials, the results presented provide strong evidence that childlessness in South Africa increased between 2001 and 2011. As expected, the results show that childlessness decreased by age of a woman. The most important indicator of increased childlessness among South African women appears to be the delaying age at first birth over time (Stats SA, 2015). The increase in childlessness is congruent to the trends in fertility levels, which have declined steadily from an average of 6 to 7 children per woman in the 1950's to 2,7 in 2011 (Chimere-Dan,1993 and Stats South Africa 2015). The results of this study are also consistent with some of the conclusions reached by other investigators, that is, childlessness is influenced by socio-economic dynamics (Boddington and Didham, 2009).

In South Africa, studies on fertility differentials have been carried out since the late nineteenth century, mainly at national level with the assumption that, in all societies, differences in socio-economic status lead to a difference in fertility (Grobbelar 1984; Sadie 1973). Population differentials indicate that white and Indian/Asian women experience higher levels of childlessness across all ages. In 2011, the two populations recorded fertility rates of 1,7 and 1,8 children per woman respectively. It should be noted that these rates are below replacement level. This pattern ties with the higher level of socio-economic development experienced amongst these populations. Generally, a direct relationship exists between fertility and the level of socio-economic development (SADHS, 1999).

The link between lower socio-economic development, i.e. illiteracy, unemployment, lower education and higher fertility has been observed in previous studies (ibid). Fertility remains high in the poorer rural areas of South Africa.

The results indicate that, as the education of women increases, childlessness also increases. The study further shows that women with a secondary and tertiary education are more likely to be childless than women with no education or a primary education. Moultrie & Timaeus (2001) in their study of the determinants of fertility established that educated women had a lower number of children compared with those who are not educated. Education, therefore, is regarded as an important determinant of fertility decisions (Birdsall, 1988; Ben-Porath, 1974). The results from studies in Asia demonstrated that women's empowerment is associated with contraceptive use (Morgan and Niraula 1995; Woldemicael, 2009), lower fertility (Balk, 1994; Hindin, 2000), and longer birth intervals (Upadhyay and Hindin, 2005). Some researchers have suggested that women's empowerment is a key pathway through which education influences

fertility (Jejeebhoy, 1995; Mason, 1987). The ideology is supported by the increasing trend of childlessness and decreasing fertility among South African qualified women over time. Generally, South Africa has, since 1994, become known internationally for relatively good performance in terms of common indicators of gender equality (MDGs, 2013), which ultimately contribute to lower fertility.

Overall, the level of childlessness is higher among the employed than unemployed. The same pattern is evident among qualified women with an income and without an income, with women with an income having higher levels of childlessness. Working women commonly postpone childbearing as a way to coordinate their work and their domestic work (Van Horn, 1988); thus, early childbearing is regarded as a stumbling block to women's prosperity in early career life. However, for women over thirty, work and family considerations compete for time and commitment. The majority of qualified women in their thirties are assumed to be in the labour force, thus childbirth after 30 years of age may reflect their ability or willingness to integrate childbearing into their work life.

High income of working women also influences fertility of women. As employers make efforts to keep their most valuable employees better-educated thus, their fertility could be subsequently delayed. Dex et al. (1996) suggest that working women with high incomes have fewer incentives for childbearing. Oppenheimer (1988) noted that as women's income rise, the important ascribed characteristics such as family formation become less important than achieved characteristics such as income.

Numerous studies have shown that rates of childlessness are higher among unmarried women than among married women (Schoen et al., 1997, 1999; Barber, 2001; Kemkes-Grottenthaler, 2003; Parr, 2005). The same observation is evident in this study. The findings therefore affirm existing knowledge that childlessness is more prevalent among women who have no partnerships, or women who find themselves in less stable relationships (Haskey, 2013). Nevertheless, the link between marriage and childbearing has weakened. The findings in the report indicate that childlessness has increased between 2001 and 2011 not only for women never married, but also for married women. In South Africa, marriage rates are substantially lower among black African women when compared to white women; however, black African women are less likely to be childless when compared to white women.

Findings from the study indicate that the majority of women who were childless were in the field of psychology, mechatronics and visual or performance arts. It is found that patterns of

childlessness by field of study in South Africa have a lot in common with those found in other countries. The finding that childlessness is higher in women who are educated in the field of visual and performance arts concur with the studies conducted in Sweden and Australia. Swedish and Norwegian women educated in arts and humanities or religious occupations have unusually high percentages of childlessness (Lappegård and Rønsen 2005). Surkyn et al. (2008) in their study indicated that Australian women trained in social science, art, theology and humanities have very high percentages of childlessness.

Women trained in education appear to have a lower prevalence of childlessness than women trained in other fields. A young woman with strong family preferences may pursue education and even a career, but she is most likely to find herself in the field of study and an occupation that better accommodate motherhood (Esping-Andersen et al., 2007). Hoem et al. (2006) found Swedish women trained in teaching and health care have much lower permanent childlessness rates at each educational level than any other field of study.

Childlessness is high amongst professionals and managers and low among qualified women in elementary occupations. It is argued that female-dominated jobs offer better opportunities to combine work and family. Such areas therefore attract women who want to or who have children. Recently there has been growth in women's representation in the labour force, including professional occupations, and in their pursuit of a higher education in South Africa. These changes have significant implications for family-building experiences, including women's childbearing patterns.

When comparing qualified women and unqualified women aged 20–49, results show a significant difference in the level of childlessness between the two categories. In some age groups, childlessness of qualified women is almost double the childlessness of unqualified women, predominantly at young age groups. These findings attest to the hypothesis that, as the education of women increases, childlessness also increases. The second key finding is that the difference in the level of childlessness begins to converge for women aged 35 and above. What can be deduced from this pattern of childlessness is that highly educated women do not remain childless throughout their reproductive span, but they postpone childbearing to elderly ages. The pattern of converging levels of childlessness was observed across all socio-economic characteristics.

In addition, the findings suggest that the proportion of women with children is higher among women between the ages 30–34 and 35–39. The findings attest to other studies on fertility

postponement among qualified women. Martin (2000) examines the growing trend of delaying fertility beyond the age of 30, and finds that the women underlying this trend are more educated women. He argues that fertility delay is a consequence of career building demands and the high costs of quality childcare.

An inherent consequence of the continued postponement of the first childbirth not only affects the number of women that remain childless but also the number of children a woman may have in her reproductive lifetime. As childbearing is postponed to later ages, women have a narrower window of time in which to complete their desired fertility due to biological limits thereby depressing period fertility rates (Bongaarts, 2002). Findings in the report indicate that there is a relationship between the level of childlessness in a cohort and the completed fertility rate of that cohort. Also, this pattern is influenced socio demographic factors such as Population group, marital status, education and residence.

On a national scale childlessness in South Africa is increasing significantly over time and there has been a recent development of a child preference of 2. Despite this, the country is unlikely to experience consequences of below replacement fertility or the dire consequence of excessive levels of old age dependency (though this is on the rise), given the size of the current population and migration in the country. However specific populations, particularly the white population may be confronted with lack of family support and care in their older age.



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