

**SELECTED SOCIO-ECONOMIC AND DEMOGRAPHIC FACTORS INFLUENCING
FERTILITY RATE AMONG WOMEN IN THE NORTHERN CAPE PROVINCE,
SOUTH AFRICA**

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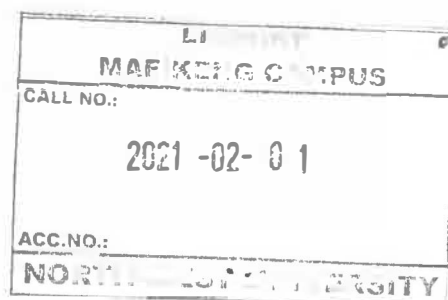
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Dissertation submitted in fulfilment of the requirements for the degree of Master of Social Sciences in Population Studies and Demography, Faculty of Human Social Sciences at the Mafikeng Campus of the North-West University

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October 2017



DECLARATION

I, Kgomotso Gladness Makgeledisa, declare that the mini-dissertation entitled “Selected socio-economic and demographic factors influencing fertility among women in Northern Cape Province, South Africa”, hereby submitted for the degree of Masters of Social Sciences in Population Studies, has not previously been submitted by me for a degree at this or any other university. I further declare that this is my work in design and execution and that all materials contained herein, have been duly acknowledged.

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ACKNOWLEDGEMENTS

- ♣ I wish to thank the Almighty God for the strength, wisdom and guidance during my studies. Without Him, this study would not have been possible.
- ♣ I wish to thank my supervisor, Professor Moses Kibet, for his guidance, advice and constructive comments towards the completion of the study. I learned a lot from him and I am sincerely thankful for the opportunity and privilege I had to work with him.
- ♣ I extend sincere gratitude to all my lecturers for their support and guidance during my studies.
- ♣ I am thankful to the North-West University for providing me with funding in order to complete this study.
- ♣ I wish to thank my parents for listening to my complaints and for going out of their way to assist me financially, despite their challenges. I wish to thank my classmates for their assistance during my studies.
- ♣ I also wish to thank my friends, Abigail Ntshidi and Mothusi Setlhabetsi for being there for me during difficult times.

ABSTRACT

The aim of this study was to examine selected socio-economic and demographic factors influencing fertility among women in the Northern Cape Province of South Africa. The focus of the study was on selected socio-economic and demographic factors, fertility and the Northern Cape as a province. The South African Demographic Health Survey 2003 (SADHS: 2003) was used in the study, and a present sample of approximately 7041 women was considered in the study. For the purpose of this study, only 777 women between the ages of 15 and 49 years were used in the study. Basic descriptive statistics were used to describe variables in terms of frequencies and percentages.

Multivariate Logistic regression analysis procedures were also used to examine the relationship between socio-economic and demographic factors on one hand and children ever born on the other.

It was revealed that fertility is higher among women with lower education than among women with higher education. The study focused mainly on women of reproductive ages (15-49 years). The main factors that play a very significant role in impacting fertility among women in the Northern Cape Province are: educational attainment; type of place of residence; contraceptive methods; ethnicity; and marital status. All data was obtained from the South African Demographic Health Survey (2003) since it is the latest data captured in South Africa.

The results of the study confirm what is suggested in the literature. Determinants of fertility as indicated in other studies are more similar to determinants identified in this study. It was established that high level of education, type of place of residence and marital status are determinants that contribute to fertility among black women, among others. It is recommended that young girls should be empowered through education and life skills as well as improving family planning and reproductive health awareness aimed at both men and women.

Keywords: *Fertility, selected socio-economic and demographic factors, Northern Cape women*

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LIST OF ABBREVIATIONS AND ACRONYMS

CEB – Children Ever Born

SADHS – South African Demographic Health Survey

SPSS –Statistical Package for the Social Sciences

TFR – Total Fertility Rate

NC- Northern Cape

%-Percentage

O R- Odd Ratios/ Exp. (B)

CI- Confidence Interval

®- Reference point

HSRC- Human Social Research Council

CHAPTER ONE

INTRODUCTION

1. INTRODUCTION

This study examines selected socio-economic and demographic factors influencing fertility among women in the Northern Cape Province. It also investigates if socio-economic and demographic factors have an impact on fertility in the Northern Cape Province. Furthermore, the study seeks to serve as a guiding document for programme planners and policy makers involved in reproductive health to have a better understanding of factors influencing fertility and to assist in the implementation of a reproductive health programme that will reduce fertility among women in the Northern Cape. The chapter also discusses the problem statement, the rationale for the study, objectives, hypotheses, and also includes the organizational of the study.

1.1 BACKGROUND OF THE STUDY

Western Europe started to experience fertility decrease around the 1860s until 1930s. Eastern Europe is one of the countries that started to experience fertility decline in the twentieth century. Thereafter fertility decrease started to be experienced globally. The results of fertility decrease were taken as a new attainment of modernisation. In classical geographic transition theory, difference in macro variables (urbanisation, industrialisation, literacy level, public health services, modern farming practices and so forth) are considered as the determinants of partner's fertility arrangement. Academic work developed the world fertility decline and that is the main reason why World Bank in 1984 World Development Report noted that it gives it full support (Caldwell, J.C, 1993).

Freedman (1993) conducted a research in Less Developed Countries (LDC) about fertility, after his research conduction his conclusion stated that if there is a development in a country's economy, there will be a transition in that country's fertility rate whereby its fertility rate will start to decline,

but if there is no economic development in a country, there country will never experience fertility decrease. He also believe that if people have access to information via mass media, for example newspaper, television, workshops, radio and so forth, people can end up being more informed about fertility. Due to technology that had been invented by the Western countries, Less Developed Countries imported this technology and that played a vital role because the Less Developed Countries started to be developed like Westerns whereby at the end they managed to have access to education and information about fertility. They have learned about many things such as family planning, job opportunities, bursaries and so forth.

When fertility of other regions in the world is thoroughly looked at, Sub-Saharan Africa is the region that experience high fertility rate and considerable dispute surrounds the possibility of these rates declining in the near future. Although fertility rate decreased significantly in Latin America and Asia during 1965 and 1985, and in Africa fertility remained constantly high, well above a level required to replace the population. Consequently, the region faced a challenge of experiencing a high rapid population growth, with rates for some populations considerably above three percent (3%) per year (United Nations, 1991; Freedman and Blanc, 1992). Countries like Kenya, Botswana and Zimbabwe started to experience transition whereby fertility rate started to decrease. In addition to the regional and national differentials in fertility rates, it is more likely to experience fertility differentials within countries, frequently in fertility survey records, there is substantial contrast in rates among ethnic, geographic, and socio-economic groups. For example, urban areas are consistently lower because of educational level of women who live in urban areas and their sector of labour market whereby these women are more likely to have more than primary school education, and they are also likely to work in the formal labour market. The number of women in each of these socio-economic group has recently decreased, and the groups overlap considerably in South Africa. Consequently, fertility decrease among these women has an impact on national level's Total Fertility Rates. In other countries fertility have been decreasing with a lower rate.

Nevertheless, generally fertility rate remain constant with more than six children per women (Altankhuayag, 2001).

In South Africa there are four (4) different racial groups which are Whites, Asians, Coloureds, and Africans. These different racial groups live their lives differently whereby they practice their culture differently and they also develop socially and economically differently. According to the Human and Social Research Council (HSRC, 2007), has documented that there is a major decline in fertility trends in all population groups and it also illustrated that fertility rate of Africans and Asians population decrease at a sudden rate. Decrease in fertility is unrivalled in Africa. Fertility among whites have reached below-replacement levels of 1.9 children per women. Fertility rate among coloureds decreased from 6.5 in the late 1960s to about three by the late 1980s, the report states. It has decreased among Indian population with 2.5 children per women. However fertility among Africans decreased from a higher rate of 6.8 in the mid-1950s to 3.1 children per women, and while still substantially higher than other racial groups, fertility decrease continuously (Swartz, 2002)

When we compare urbanisation among different racial groups, whites are the ones who are well urbanised than any other racial groups in South Africa and they are also more learned than others. They have different kinds of religion which are Protestant, Roman Catholic or Greek Orthodox and Jewish. In the twentieth century fertility among whites was lower than others and it was compared with the fertility level of the most developed countries and this proves that white people were more urbanised than others in a country (Singh, 2011).

According to census 1991 only aging Asians population were the only one who were not educated and most of youngsters were educated. The initial decrease in fertility of Asians was mainly the results of a higher age, and the high number of contraceptives usage. It is also possible that availability of effective modern contraception made it unnecessary for couples to postpone their

marriage in order to avoid unplanned pregnancies, thereby reversing the trend of later marriage. Educational level of Coloureds is at the same level as the educational level of the Asians whereby aging population groups were the ones who were not educated. From the 1930s until the 1960s there was no fertility transition among this racial group. Thereafter fertility rate among Coloureds started to decrease, the reason behind it is that their standard of living started to improve and there were economic transition with urbanisation whereby by there was accessibility of public health services and also the duration of breast-feeding decreased(Moultrie, et al. 2003).

The political factor (Apartheid) is one of the reason why declined by one-third under apartheid. The reason why fertility rate among Africans delayed to decline is because of consequences of apartheid and its socio economic status. Yet other contended that socio economic development of Africans developed without withstanding apartheid and the development of socio economic contributed to the fertility decrease among them. Among rural and urban women there was a diminishing mean desired of children. In the mid-1990s their mean desired number was lower than the levels found among the three non-African groups during the late 1980s. The rate of women whose demand for contraception was fulfilled and those whose requirement for contraception was not met by reasons of use, namely: to space births or to anticipate further pregnancies. Obviously among all groups there was an extraordinary demand for contraception, however fertility was low among Africans. The potential for fertility decrease won't be high unless this demand can be met. However in the significance among Africans on the demand of spacing births (49%), though among non-Africans (White, Coloured and Asians) the significance is on the prevention of births (60%).

The clarification for the moderately high fertility among Africans disregarding their contraceptive use must be looked for in their initial entry into reproduction and the emphasis on spacing births as reason for using contraceptives. As on account of the three populace groups (White, coloureds, and Asians). Social variables appear to be more critical than socio-economic variables in African

fertility trends. Should urbanisation level among Africans increase in the near future, the social values that empowered high fertility ought to lose its effects as the number and proportions decrease and newly arrive in-migrants accept urban values (HSRC, 2007).

1.2 PROBLEM STATEMENT

The South African Demographic and Health Survey (SADHS, 2003) report revealed that South Africa is experiencing a demographic transition from high fertility rate to low fertility rate. A decline in fertility is influenced by the changing socio-economic status; from traditional way of doing things to modern society. It has been evident by Human and Social Research Council (HSRC, 2007) that fertility decline varies by ethnic groups of which White population group is already below the replacement level, while Coloureds and Indians are relatively low and the declining trend is continuing. However, fertility among Blacks still high but declining at a very slow rate.

The Human and Social Research Council (HSRC, 2007) and The South African Demographic and Health Survey (SADHS, 2003) revealed that the Total Fertility Rate (TFR) for all women in South Africa decline from 7 to 6 per 1000 women in 1950s and went down to average of 4 children in 1980s and about 3 children per 1000 women in 1990s.

Although South African Demographic and Health Survey (SADHS, 2003) revealed that there has been a decline in fertility due to changing of socio-economic status, the Total Fertility Rate (TFR) among children ever born to women in Northern Cape has remained high by 2.8 which showed that the decline in fertility has never been uniform or constant to all provinces in South Africa.

Besides all the alterations and dynamics introduced by apartheid regime and any social difficulties associated with fertility, factors contributing to high rate of fertility in Northern Cape are not well understood. Therefore, the study intended to examine socioeconomic and demographic factors that influence fertility levels and also fertility differentials in Northern Cape Province.

1.3 THE RATIONALE OF THE STUDY

Although there has been a decline in fertility across the world and also in South Africa, the decline has never been uniform to all the provinces as highlighted in the problem statement of the study, the total fertility rate of Northern Cape province of South Africa still remain high compared to other provinces. Therefore the study is very importance because the outcome that will be acquired will assist by giving information about factors influencing fertility in Northern Cape Province. By so doing, this will allow policy makers and managers in various departments to make informed decisions in their day to day activities. The outcome that will be acquired from this study will also help in the improvement of status of women, by expanding the understanding of how high fertility decreases the capabilities of women. Furthermore, the study is applicable to make individuals mindful that fertility can be unfavourable to the improvement of the nation or province. Additionally, it could also help in providing knowledge on programmes and strategies aiming at addressing the problem of reducing fertility in Northern Cape, and also help in creating additional information since much has not been done in Northern Cape Province regarding this aspect, and encouraging women to participate more in life orientation and stop being ignorant.

1.4. OBJECTIVES OF THE STUDY

1.4.1 Main objective of the study

The main objective of the study is to examine the selected socio-economic and demographic factors influencing fertility levels among women in the Northern Cape Province.

1.4.2 Specific objectives of the study

The specific objectives of the study were to:

- To estimate the occurrence of the selected socio-economic and demographic variables of fertility
- To identify the significant variables of childbearing in Northern Cape

- To identify the key socio-economic and demographic determinants associated with fertility in Northern Cape.
- To examine the socio-economic and demographic differentials among women in Northern Cape.

1.5. HYPOTHESES

The following hypotheses were tested in the study:

- Women who are more educated, are less likely to have high fertility than women with lower education;
- Black women have higher fertility than white women and other racial groups;
- The more the use of contraceptives, the lower the fertility;
- Women living in rural areas, have higher fertility rates compared to those in urban areas;
and
- Women exposed to marriage at an early, have many children compared to those who get married late.

1.6 ORGANISATION OF THE STUDY

This study is divided into five chapters as follows:

Chapter 1 is the general introduction. It presents the background of the study, the problem statement, and rationale for conducting the study, objectives of the study, hypotheses, and the organization of the study.

Chapter 2 is the literature review. Existing information regarding fertility among women, fertility trends and theories, and socio-economic and demographic factors influencing fertility are discussed in this chapter, as well as conceptual framework.

Chapter 3 focuses on the methodology used in conducting the study. A summary of geographic, demographic and socio-economic profile of the Northern Cape Province is provided. It also outlines the research design, source of data, target population, sample design, description of variables, data analysis procedures adopted in the study.

Chapter 4 is the analysis of data and interpretation of results (univariate analysis, bivariate analysis and multiple regressions).

Chapter 5 provides a summary, conclusion and recommendations of the study. It also provides an overview of the study and recommendations based on the findings of the study.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter reviewed what has already been done by other authors with the same topic at hand; this helped the researcher in understanding factors that affects fertility rates and not only in South Africa but in general. According to Claire *et al.* (1988), literature review is defined as a search and study of current writings on the problem under investigation. Yaukey, Anderson and Lundquist (2007:406) defined fertility as the childbearing performance of individuals, couples or groups as indicated by the frequency with which occurs in the population.

Weeks (2005:245) define fertility as the reproductive performance of individual rather than a mere capacity to reproduce. When looking on the two above given definitions one can clearly see that these definitions are arguing with one another in a sense that one see fertility as a chosen decision by individuals or rather a choice while the other defines it as a reproductive performance. This chapter also examine the views of different researchers with regard to theories on fertility, Levels trends and patterns, reasons for high fertility rates in traditional societies, as well as past and present population policies.

2.2 Theoretical Framework.

Population studies particularly researchers have always been guided by various theoretical framework/ theories. Fertility changes mainly arises after many interactions be it social, cultural, traditional, political or economic aspects of the society which changes how the society operates or functions. It is these aspects that play a major role in directing how the society operates because they can influence the society preference such as in the household, the family desires and formation.

2.2.1 Cultural perspective theory

The cultural perspective theory maintains that fertility can be determined based on cultural norms and values. These norms and values are respected as they bring order to the reproductive behaviour of couples through explicit and implicit social rewards and lastly, they are culturally institutionalised (Freedman, 1993).

2.2.2 Demographic transition theory

According to Johnson-Hanks (2008:302), “demographic transition is a historically specific change from high to low rates of fertility and mortality that many human populations have undergone since 1750”. In its original formulation, demographic transition explains high fertility as a reaction to high mortality. As mortality decreases, the need for high fertility decreases, thus birth rates also decrease. The transition theory envisages fluctuating birth and death rates in the transition period producing, in the long term, a near balance between fertility and mortality.

The theory of demographic transition clearly explains what happens when fertility is either high or low and provides relevant explanations behind the increase or decrease of fertility. Transition theory states in one of its stages that low fertility rates are due to prevalence of small families, especially two-child family (Donald, 2003:18). Transition theory is also closely related with urbanization and industrialisation. In the case of South Africa, community-based health services, together with primary education for girls, result in lower births, especially in less developed countries (Donald, 2003:21).

For fertility to be at a low level, there are three pre-conditions that should be considered: Fertility must be perceived as ethically and morally acceptable; couples must look at fertility control in terms of economic and social advantages; and there should be great availability of knowledge and effective use of contraceptive methods for fertility reduction. Only then will fertility decline (Watkins, 1986). It should also be noted that in the first stage of the demographic transition, birth

rates are still high. Since the low rate of fertility has been explained, it is also of vital importance to explain why fertility is high. Sinha and Zacharia (1984:294) stated that “in stage one of the demographic transition (DT), there is widespread prevalence of illiteracy, universality of marriage, early marriage, absence of deeply-rooted social beliefs and customs about family size and attitudes towards children, all these account for high fertility”.

South Africa is reported to be in stage three of the demographic transition; characterised by declining fertility, mortality dropping at a faster rate and an increase in natural growth. Factors such as education, better medical services, increased income levels and effective use of contraceptives, are responsible for the decrease of both fertility and mortality (Sinha & Zacharia, 2003:285).

2.2.3 The Theory of Diffusion

This is basically a macro-type level of a theory because it basically looks at individuals, the socio-economic conditions of those individuals and how the conditions can affect the fertility. Concepts diffusion simply means spreading something over a wide area hence this theory looks at how individual's perspectives; ideas and innovations can change the society or shape fertility behaviour. This diffusion of ideas can take place through social interactions. This theory suggests that fertility transitions can be observed through the timing of tradition or cultural boundaries rather than that of demographic transition or modernization factors. Social developments such as improved standard of living, literacy particularly amongst women and status plays a major role than economic factors.

2.2.4 Economic theory of fertility

The economic theory of fertility explains fertility decline in developed countries. This theory explains fertility decline by stating that raising children is a cost in terms of education, health care and subsistence. The theory maintains that if parents predicted that raising children was very

costly, they would have demanded fewer children (Becker, 1960). Economic theory of fertility applies mostly in more modernised societies or developed countries.

2.2.5 Gender Relation Perspective

Gender relation perspective suggests that fertility reduction can only be achieved by empowering women of all ages and by bringing knowledge through the adoption of fertility regulation practices from other countries that experienced fertility decline to the replacement level like in China (Freedman, 1993).

2.2.6 Modernisation theory

The theory of modernisation maintains that pre-modern times human society was generally led by “tradition” and that the huge economic changes brought by industrialisation, pressured societies to reduce traditional institutions. Among societies where tradition is the centre, rates of fertility and mortality are high. When it comes to modernised communities, both fertility and mortality are at low levels and in between, is the demographic transition (Demey, 1968:502). Under modernisation, society-wide accelerates in terms of the status or standard of living and improved public health infrastructure brought about by this change.

People did not just make decisions to move from farms to towns to take a job in some factory. Rather, economic changes took place that created higher wage jobs in urban areas while eliminating agricultural jobs. As modernisation continued, fertility decreased. The theory assumes that as societies change from traditional to modern stages, there is economic growth which further leads to a decline in fertility (Weeks, 2012:92). In its initial formation, modernisation was best expressed by the sentiments “take care of the people and the population will take care of itself” or “development is the best contraceptive” (Teitelbaum, 1975).

In addition, modernisation theory states that since many countries have gone through transition, death rates have decreased while the standard of living has improved; birth rates declined a few

decades later, eventually dropping to low levels, although as rarely as the death rate. Birth rates eventually decreased as the importance of family life was diminished by urban and industrial life, thus decreasing the pressure for large families (Weeks, 2012:92). Once a country has gone through all the necessary stages of development, then fertility is sure to decline. This theory clearly explains the conditions for fertility decline as mentioned above. It also emphasises that the same economic development that lowered mortality is theorised to transform a society into an urban state in which compulsory education lowers the value of children by removing them from labour force, and people will notice that lower infant mortality means that fewer children need to be born to achieve a certain number of children (Weeks, 2012:92).

2.2.7 Wealth Flow Theory and Social Perspective

There is a strong relationship between the Wealth Flow Theory and the Social Perspective, both of which attempt to explain that parents demand children based on positive and negative values. A positive value inspires couples to bear children and includes emotional, companionship, continuity of lineage, labour force, old-age security, and care for the values of siblings.

In divergence, negative values are those that will discourage parents in demanding more children and involves the direct economic cost of children, and opportunity cost, including goods, services, time management, freedom from stress and lifestyle (Fawcett *et al*, 1975).

Another important aspect suggested by the Wealth Flow Theory is the fact that parents will have no or few children, only if they avoid or postpone early marriage and use contraceptives. Furthermore, the theory provides a clear vision of why the educated and high income earners in developing countries have a low fertility rate. This is mostly seen among the white population group, followed by coloureds compared to blacks.

2.2.8 The Rationale Choice Theory.

This theory simply attributes that there are ideas and attitudes that encourage people on how many children to have of which this decision is influenced by the socio-economic conditions prevailing around them. This theory is simply about people making cost-benefit analysis about what to do and how to act, in primitive and traditional societies there is no ceiling on how many children to have because of the belief that children are the blessings from God therefore they are the source of income and will supports parents throughout life and of which they produce more than what they cost in society (Weeks, 1999:99).

All theories mentioned and explained above shows that fertility is influenced by socio-economic aspects in the society. Secondly, all illustrates how a country can achieve low fertility rate because these theories simply states that if a country or province for that matter becomes urbanized and industrialised, people will no longer see a need to have more children but instead the focus will be more on improving their standard of living. Therefore population advocates, policy makers and researchers of South Africa particularly Northern Cape Province can use these theories to gain progress in reducing fertility with the aim to improve the socio-economic conditions of a country and its provinces, knowing that will automatically results in low fertility rates. Once there is an improvement in the socio-economic services and globalization takes place leading to the diffusion of ideas and there will be practice in reproductive health.

2.3 Trends

2.3.1 Global patterns of fertility.

Around 1950s developing nations started to experience fertility decline unlike developed nations which experienced fertility declines long before developing countries could. In developed countries the total fertility rates (TFR) declined to a very low rate of below 2.0 between 1980s and 1990s and this decline were partly because of improved health standards based on reproductive

health fuelled by modernization. In less developed countries the total fertility rates declined to 4.0 and this was also partly because of poor/lack of improved health standards and traditional/cultural practices. In the European nations rapid decline in fertility rates has been due to adequate health facilities, socio-economic backgrounds, industrialization and urbanization. In less developed countries fertility rates declined slowly mainly due to cultural, tradition or religious practices as there are those cultures/traditions which are against the use of modern ways of contraception (Mostert et al, 1998:118).

According to Moultrie & Timeus (2003), fertility in South Africa is now lower than elsewhere in Sub-Saharan Africa meaning South Africa is experiencing the fastest fertility decline of which it can even be compared to fertility rates of middle income countries in other parts of the developing countries and these can be seen by looking at four major population groups namely: Whites, Asians, Coloureds and Blacks. At the top are whites which experience fertility decline long before any other ethnic group could. Their total fertility rates were at about four children per woman and it declined to 3.5 births per woman and this decline started in the 20th centuries and continued to decline until it reached the replacement rates of 1.9 births per woman around 1989 to 1990s.

The second group is the Asians, their fertility rates were 6.7 children per woman and declined to 2.5 births per woman and this decline took place around 1950s to 1980s. The third group is the Coloureds, their total fertility rates started declining from 6.5 in the 1960s to 3 births per woman around 1980s and the last ethnic group are the Blacks, who had the total fertility rates (TFR) of 3.9 children per woman in the 1960s and declined around 1950s to 1990s (Mosert et al, 1998:124-137).

Moultrie & Timeus (2003) also maintained that South African population was more urbanised in 1998 than it was in 1970s and this brought about many changes, knowledge on contraceptive use, access and availability were high in 1998, while before contraceptive were not neither ready for

use nor cheaply made available around 1970s, the social, cultural, political and economic situation of south African societies has changed beyond recognition over the past 30 years and level of education has improved. This discussion brings us to the South Africa fertility transition.

2.3.2 South African Fertility Transition.

Kaufman (2001) South Africa's total fertility rate (TFR) is estimated to be one of the lowest in sub-Saharan Africa, fewer than three births per woman and it is declining at the same time. Moultrie & Timues (2003) acknowledged that South African fertility transition has run a long course of gradual change; it is said by Caldwell & Caldwell (1993) that it probably started to decline in the early 1960s but certainly not later than the early 1970s. Moultrie & Timues (2003) highlighted that the reasons why fertility decline between 1960 and 1970 is because of the structural constraints of African women under apartheid regarding their mobility, livelihoods and access to reproductive health.

The mobility of African women enabled them to have access to reproductive health system that was only located at white cities because African women were domestic workers to the urban elites. They further stated that the reason for the accelerated decline in fertility from the mid-1980s is probably the reflection of the gradual freeing up South African society since the mid-1970s and the extension of the government family planning programme to Africans in 1974.

2.3.3 Reasons for high fertility rates in Traditional societies

Mandishona (1987), the traditional societies are proponent of high fertility levels because these gives some form of social security at old age, a source of free labour (children as assets rather than liability), social prestige and replacement children as a results of high infant/child mortality. Each year, the world adds the population equivalent of a New Mexico; mostly in the poorer countries. These increases have strained the abilities of economies in the developing countries to provide

employment, to increase agricultural production and to make investments needed if expanding cities are to function (Singh, 2011:77).

2.4 Determinants of fertility among women (15-49).

2.4.1 Age

Age is defined as the number of years a person has lived. In this study, age is a very important variable of fertility because as the age of women increases, the number of children ever born will also increase. It means that as the age of women increases, they become more exposed to pregnancy of which childbearing process also increases due to higher probability of getting sexual intercourse within the marriage establishment (Mosimanekgosi, 2016)

2.4.2 Education

Education can affect the number of children that a woman decides to have. It is likely that the communication skills gained, specifically the potential to read may change the conceptual frame of reference of the individual considerably. Level of education can also affect an individual in terms of place of residence, level of income and socio-economic status (Mostert *et al.*, 1998:114). Women who have only a few years of education, usually have more children compared to those with no education at all. However, as levels of development increases, the relationship become monotonically negative (Mostert *et al.*, 1998:115).

Studies have revealed that educational composition of the population is a key predictor of average fertility and that low levels of education or schooling may result in stalling fertility. The effect of a woman's educational status on fertility has been reported by many researchers. According to Negolo and Lilian (2012), "most educated women have either spent more years in school, thereby increasing their age at first marriage, hence resulting in fewer number of children compared to those who have never been to school".

Negolo and Lilian (2012) further maintain that “longer periods in education increase the mean age of women at first childbirth and reduce the number of years in which they can have children”. In addition, higher levels of educational achievements contribute to higher labour force participation among African women, and change their desire for children compared to other goals. It also provides them with greater authority in many sequences of life.

Better educated African women are also more knowledgeable of health programmes and contraceptive methods. As a result, they are more capable of ignoring undesired pregnancies and births (Negolo and Lillian, 2012). Many females delay marriage and birth. Once they succeed in delaying these, the family size decreases while their education and age at marriage increase. Above the age of 20, extra years in marriage delay is mostly related to overall fertility decline. Therefore, females who have high levels of education, are those who are most likely to practise family reduction (James, 1996:49).

2.4.3 Place of residence

Place of residence is a powerful factor that affects all aspects of life of individuals. Fertility can vary between rural and urban origins. Huzayyin and Acsadi (1976) argue that African women, especially those who grew up in rural areas, experience higher fertility than those who grew up in urban areas. The general view is that majority of people who live in urban areas are Whites, Coloureds and Indians, while majority of Black people live in rural backgrounds.

Women of urban origins have lower fertility than those of rural origins. This is because they are more exposed to media technologies; have better family income, and are more literate than those of rural origins. Women of urban origins are able to make reproductive health decisions for themselves and other social activities (Ritchey and Stokes, 1971:373-374).

Due to the nature of their location, rural people are more disadvantaged compared to urban people because majority of women in rural areas suffer from gender discriminatory practices. For

example, women cannot lead a family or be the head of a household, thus, they must obey their husband's decisions. Women also have lower literacy skills, poor health and low decision-making positions within families (Ogbuagu, 1996).

Based on the inequalities of African women who live in rural areas, majority of them reproduce at a very young age and tend to get married to older men than women in urban areas. In most cases, when the age gap between couples is too wide, wives usually do not feel comfortable to discuss certain issues regarding sexual activities. In simple terms, rural areas have high fertility rates than urban areas (Altankhuyag and Aassve, 2001:13).

2.4.4 Ethnicity

Ethnicity is considered as a powerful factor in South Africa, in particular, and Africa in general, since it affects all aspects of life of individuals (Lubaale, 2007).

Peng (2002) and Nahmis (2005) argue that fertility among different ethnic groups have various levels in terms of socio-economic development (education, employment opportunities and occupational structure). Initiation schools also influence the values of family life and childbearing in women. This traditional custom is still being practised and valued in most provinces in South Africa, especially the Northern Cape Province.

Furthermore, in most African societies, men are considered as decision makers on issues relating to production while women are expected to be submissive. This is likely to happen in rural areas because it is believed that the husband must give authority in all situations such as the number of children he wants to have without considering the opinion of the wife who will be caring for the children (Kolawole and Isiugo-Abanihe, 2002).

2.4.5 Use of contraceptives

Research shows that the availability of family planning services had a significant impact on the levels of contraceptive use and fertility (Mostert *et al.*, 1998:121). In South Africa, there has been

a drop in the number of women who have ever used contraceptives, while 30% to 50% of women have had unplanned or unwanted pregnancies. Contraception is the third of all the three important factors which directly determine the level of fertility.

Many women are prone to the risk of unplanned or unwanted pregnancies due to low and ineffective use of contraceptives, thus increasing their fertility (John, 1995). Present-day contraceptive methods enable family planning methods to be implemented in most developing countries. However, religious, cultural and political resistance still constrain the provision of knowledge and services of contraceptive use (Rossouw & du Plessis, 1994).

Knowledge about contraceptives and contraceptive use is high in South Africa. From the literature, it is clear that usage of contraceptives is also influenced by religion, culture, age, education and social factors. All these factors contribute to either an increase or decrease in fertility among African women (Rossouw & du Plessis, 1994)

The 1998 South African Demographics and Health Survey (SADHS) revealed that 96% of women knew about contraception, although the rate of usage of was approximately 50%. A huge number of women (75%) were reported as ever having used contraceptives. Present-day types of contraceptives are frequently used by women than the traditional types. Injections are frequently used by black women. The conclusion, therefore, is that, lower condom usage contributes to high HIV/AIDS prevalence, which of course, leads to a decrease in fertility among women in South Africa (SADHS, 1998).

Furthermore, contraception allows a woman to take charge of her fertility, which is a basic liberty from which other freedoms emanate. In this way, she is able to complete her studies, get employment and make her independent marital decisions. Highly educated women have greater chances of using condoms than less educated ones. The withdrawal method is mostly practised by educated women compared to uneducated women. However, both educated and uneducated

women lack knowledge on these forms of contraception, including IUDs, diaphragms, hormonal implants, withdrawal methods, sterilisation and emergency contraceptives (Kolawole *et al*, 2002).

2.4.6. Marriage

Marriage plays a very significant role in most societies in South Africa, especially in the formation of large families and childbearing. Marriage is a union that should be respected by adults, especially those who are culturally dominant. According to the SADHS report (1998), women get married while they are still young. SADHS (1998) maintains that all women getting married at the age of 15 and below have to obtain permission from their parents.

Marriage is directly associated with fertility. Thus, women and men, once married are expected to bear and raise children. This therefore, encourages women to have children at a very young age. This explains why married women tend to have more children than unmarried women of the same age (at the end of their reproductive period). Pre-marital marriage is not a preferred option in most societies, especially in rural areas, thus women prefer to have children after marriage (Swart, 2002).

However, there are several socio-economic changes currently taking place in South Africa. There are changes happening in terms of marital status, attributed to the fact that more and more women are becoming educated and prefer to further their studies. This is an attempt to empower themselves in order to get better employment in future. Women also study because they want to be independent in future and improve their status before getting married, thus preferring to get married late.

In South Africa, there is high fertility among black women compared to the other population groups. According to Swart (2002), this situation is reversing as unmarried women are currently those contributing in increasing fertility rate. Unmarried African women believe that childbearing

increases their chances of getting married. On the other hand, young women use childbearing to prove their productivity to their spouses before they agree to formal marriage (Calves, 1999).

Fertility plays a very significant role in overall fertility levels in South Africa (Sibanda and Zubiri, 1999). Women who prefer to get married at an early age, are more likely to have little or no education at all since they may consider childbearing as a means of social acceptance, recognition, and also a source of income, especially in communities where daughters are given away in exchange of *lobola* during marriage. Women, who prefer to get married late, are more likely to have different views about fertility preferences and use of contraceptives compared to those who got married at a very young age (Omariba, 2003).

Furthermore, marriage can contribute to increasing teenage pregnancy in society. Families with low socio-economic status are more likely to give away their daughters for marriage. Such daughters are expected to submit to their husbands as part of wifely duties. However, teenage pregnancy among blacks is not perceived negatively among whites and Asians. Black females and males value fertility very highly in their communities. It is not something that is surprising to blacks, to them, pregnancy has a positive value not generally experienced in white communities (Preston-White *et al.*, 1990).

Other contributing factors of fertility.

2.4.7 Employment

Mostert *et al.* (1998:115) states that due to competition for time and money, working class women have few children compared to unemployed women. However, high rate of fertility could contribute to a woman's entry into the labour force as she may feel compelled to start work in order to support her family. As socio-economic levels increase in a developing country, fertility differentials increase as well. Mostert *et al.* (1998:116) further maintain that "the fertility of

women, who worked outside a family home, was generally lower than that of women who were paid for their work by family members”. Full-time employment is associated with reduced fertility.

2.4.8 Income

Women with high incomes tend to have few children (Egyptian Fertility Survey, 1983). Families that have high incomes, also have high educational status as well as high knowledge of contraception. Income and wealth are negatively associated with fertility. Increasing income generally stimulates higher educational attainment and aspirations, delays marriage and diminishes the need for labour. The long-term effect of high income, economic development, and modernisation is a drop in fertility (Simon, 1974). The higher the income earned, the lower the interest of getting married, thus a drop in fertility (James, 1996:50).

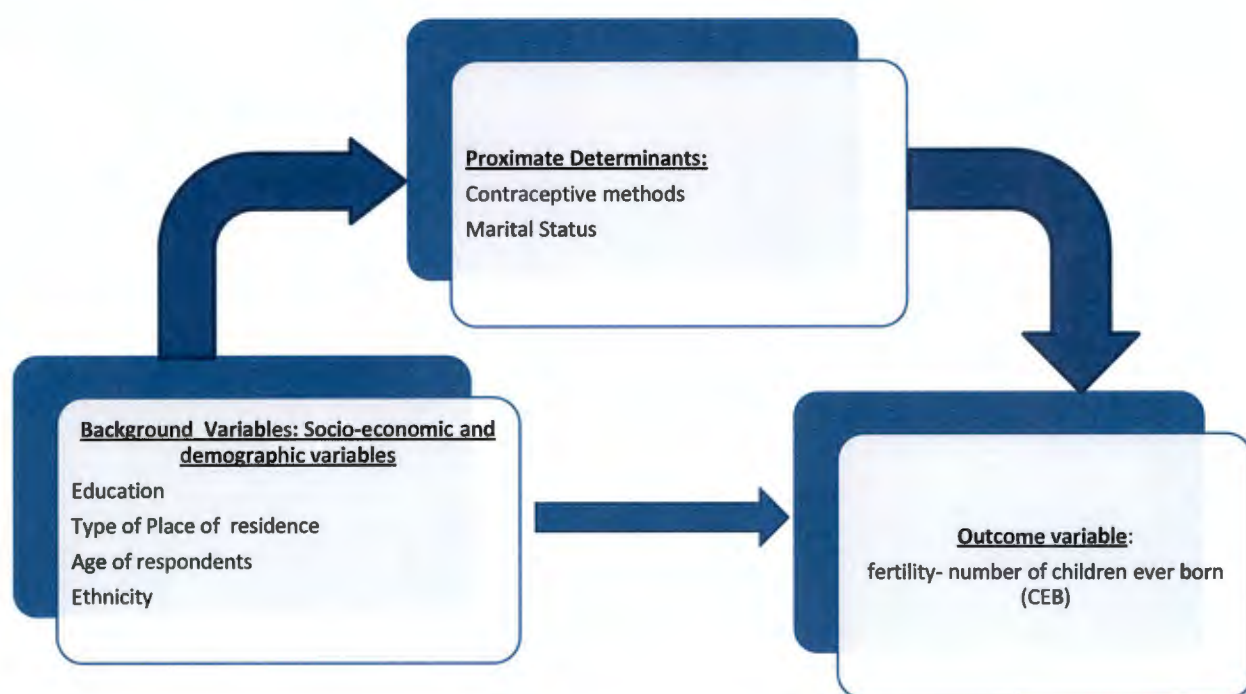
2.5 Conceptual Framework.

The structural conceptual framework elucidates how the socio-economic and demographic variables influence fertility through proximate variables. According to (Bongaarts and Potter, cited in Nwogwugwu, 2013) the socio- demographic variables (background variables) and Proximate variables are two separate groups of determinants of fertility, of which one depends to another. It actually means that the background variables which are socio-demographic variables operate through the proximate determinants to influence fertility. For the purpose of this study, Bongaarts fertility model will be adopted to provide more understanding on how proximate determinants or variables has a direct influence on fertility and also helps in understanding how socio-economic and demographic variables affect fertility.

Therefore, for the purpose of this study- ethnicity, contraceptive methods, and marital status are used as proximate determinants (intermediate variables) of fertility. The background factors are the selected socio-economic and demographic variables which are education and place of residence. The dependent variable (outcome variable) is fertility- measured as the number of

children ever born (CEB). The structural conceptual framework operationalized below shows the relationship between the background variables of women and proximate determinants of fertility.

Figure 1: The adopted structural conceptual framework of the relationship between fertility, socio-economic & demographic, and proximate determinants (Bongaarts *et al.*, 1984).



Fertility can be influenced by many determinants be it directly or indirectly and also there are socio-economic and cultural factors which can influence fertility. Direct determinants of fertility are those factors which influence fertility directly. Direct determinants are those factors which influence fertility via other variables/factors.

An indirect determinant of fertility such as place of residence taken from the conceptual frame work can influence fertility indirectly because women who reside in rural areas have more children than those women who reside in urban areas regardless of income or their level of socio-economic

developments. Women who reside in urban areas have less number of children partly because of the modern type of lifestyle which they live in unlike in most rural areas whereby the practice of certain cultural and societal norms still prevail, e.g. in rural areas the practice of extended family still take place unlike in urban areas whereby the nuclear-type of family is mostly preferred, which explains that women in urban areas are less likely to familiarize themselves with premarital childbearing because they initiate sexual activity at an older ages, and even if they are sexually active they are more likely to use contraceptives than women in rural areas.

Now taking a socio-economic factor such as education for example, the level of education particularly among women has a very significant role in influencing fertility. With education there are lots of factors to consider before having children. Being exposed to career prospects and enrolling at tertiary institution prolongs the age at first marriage thereby exposing women to the knowledge on contraceptive use hence a rise in educational level among women leads to a decline in fertility and the rise in late age at first marriage (Mosert et al, 1998:114-115). Fertility is mostly the highest among women with no education than those women who have education or has enrolled to further their studies (SADHS, 1998).

Contraceptive use also has a direct influence on fertility rates because by having knowledge on the alternative ways such as family planning methods directly prolongs the age at first birth particularly among women of child-bearing ages (Swartz, 2002:545-547). It means that, contraceptive can influence fertility in the sense that if a woman become married between the age of 20-24 are at the high risk to be exposed early to sexual activities and that can lead to the less use of contraceptives, which in turn increases the chance of childbearing as compared to their counterparts who marry at a later ages.

Current age of the respondent also expected to influence fertility indirectly because women especially those between the age group 15-19, 20-24 are likely to be at risk/ exposed early to sexual activities which in turn increases the chances of childbearing

Indeed there is a relationship between socio-economic and demographic characteristics in influencing fertility among women because educational environment is not conducive for motherly commitments. Furthermore, education and usage of contraceptive also have an impact on fertility because the more they became educated, may delay getting into marriage and postpone their involvement in sexual activities, the lower the fertility.

CHAPTER THREE

METHODS OF ANALYSIS

3.1 INTRODUCTION

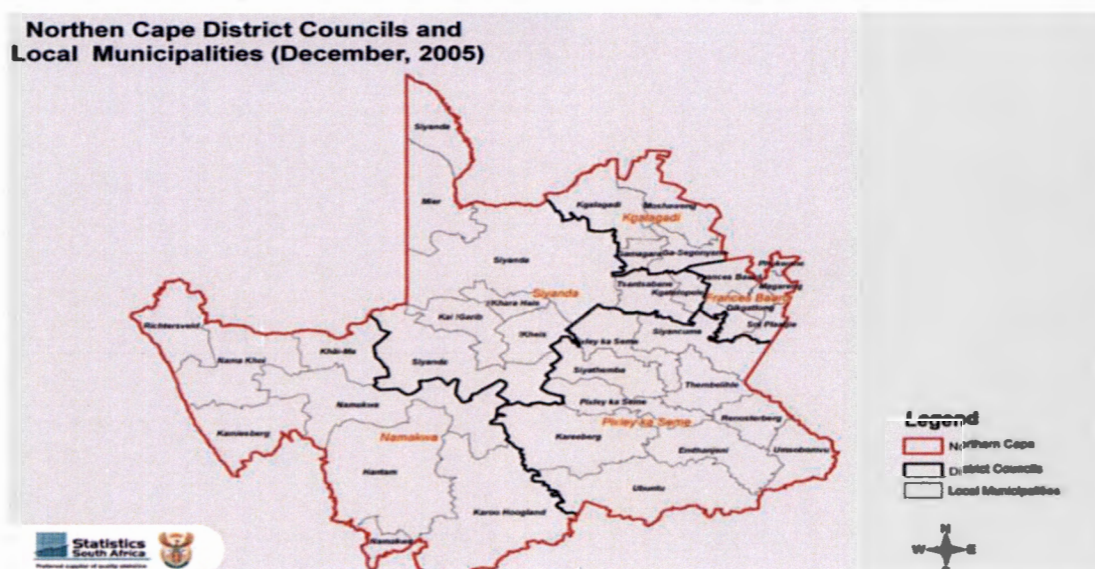
This chapter describes how data was collected, analysed, and interpreted in this study. Geographic, demographic and socio-economic profiles of respondents are also presented in this chapter. The methodology used in conducting this study is provided and an explanation of quantitative techniques in social science research is given. The rationale for using the quantitative approach is provided, the sources of data, the target population, sample design, description of variables, and statistical analysis are explained. The focus of the study is the Northern Cape Province. Selected socio-economic and demographic factors influencing fertility among women were analysed in order to understand their statistical relations using Univariate, Bivariate (Cross tabulations, Chi-square testing) and Multivariate regression analysis.

3.2. STUDY AREA

3.2.1 Geographical location

The Northern Cape Province of South Africa is one of the largest provinces in the country but has the lowest population. It is made up of five district municipalities, namely: Namakwa, Siyanda, John Taolo Gaetsewe, Frances Baard and Pixley- Ka- Seme. Frances Baard is one of the largest district municipalities in terms of population compared to other district municipalities. It comprises of two main towns (Barkly West and Kimberly).

Figure 3.1: Northern Cape Province by District Councils and Local Municipalities



Source: Statistics of South Africa, 2011

3.2.2. Demographic profile

According to SADHS (2003), the Northern Cape Province of South Africa has 3183 households. Only 777 women aged 15-49 of childbearing years were interviewed in this study. However, the estimates are slightly different from Census (2011), which indicated that there are 301405 households. The discrepancies might be explained in terms of sampling weights used by SADHS (2003) and the one used by Census (2011). For example, data used in Census (2011) revealed that blacks and coloureds were over represented while other ethnic groups were misrepresented.

3.2.3. Socio-economic profile

The Northern Cape is one of the three provinces that depend on the per capita income of the country. Despite all its fortunes, the province is very poor thus leading to high levels of poverty, unemployment and inequalities in the distribution of income among different ethnic groups. Majority of people who reside in the Northern Cape depend on agriculture as their source of survival, especially those living in rural areas.

3.3. RESEARCH DESIGN/APPROACH

A quantitative research approach was used in conducting this study. The primary objective of using this method was to quantify the percentage at which each independent variable influences the dependent variable (in this case, children ever born). A quantitative research approach is based on numbers and has the outmost ability to test the hypothesis (Greener, 2011). It explores the measurements and analysis of causal relationships between variables rather than processes (Denzin *et al.*, 2011).

Basic descriptive statistics were used to describe variables in terms of distribution, frequency, central tendency, measures and form of dispersion. Descriptive statistics included averages, frequencies, cumulative distributions, percentages, variance and standard deviations. Variables can be exhibited graphically by tables, bar or pie charts. Descriptive statistics are also used to infer general relationships between variables.

3.4 SOURCES OF DATA

Secondary data from the South African Demographic Health Survey (SADHS, 2003) was used in the study. It was the second of its kind to be conducted in the country. The primary objective of the survey was to collect and make available up-to-date information on population dynamics for planners, policymakers, researchers and development managers. It also aims at assisting in the establishment, implementation, monitoring and evaluation of initiatives aimed at improving the standard of health and life thereof, drawing a vision statement on the perceived and desired conditions at national level in South Africa. Information was collected mostly on levels of fertility, contraception and fertility preferences, and other socio-economic aspects of the country from all nine provinces of South Africa (Western Cape, Eastern Cape, Northern Cape, Free State, Kwa-Zulu Natal, North West, Gauteng, Mpumalanga, and Limpopo). The survey was considered for this study because it is the most recent information about South Africa (SADHS, 2003). However, the focus of this study is on information collected from the Northern Cape Province.

3.5 TARGET POPULATION

The target population for the study consisted of women aged 15-49, residing in the Northern Cape Province of South Africa. Women who had given birth as well as those who had never given birth were considered for the study. This target group was chosen primarily because women of those age group are more likely to fall pregnant and are greatly expected to participate in socio-economic and demographic activities such as marriage, employment, education and use of contraceptives, among others.

3.6 SAMPLE DESIGN

The 2003 SADHS was designed to be a representative survey of approximately 7041 women. South Africa was stratified into nine provinces and each divided into urban and rural areas. For the purpose of this study, Northern Cape Province was selected and only 777 women between the ages 15-49 were interviewed (that is, 537 from urban and 240 from rural areas). This was done to understand the fertility levels and differentials as well as to understand the relationship between dependent and independent variables of fertility, that is, socio-economic and demographic factors (SADHS, 2003).

3.7. DESCRIPTION OF VARIABLES

The dependent and independent variables define the focus of the study. An independent variable refers to factors that can be measured, manipulated or selected by the researcher to determine its relationship to an observed phenomenon. A dependent variable refers to a factor observed and measured to determine effect on it (Bless C, Higson-Smith C, Kagee A, 2006:30).

3.7.1. Dependent variable

The main variable in this study is fertility measured as the total number of Children Ever Born (CEB). This refers to the actual number of children born alive to women aged 15-49 years. This variable was used as the dependent variable because it determines the level of fertility. The variable

was obtained from the South African Demographic Health Survey, 2003 (SADHS, 2003). For multivariate binary logistic regressions, Children Ever Born were categorised as less or equals to two children (≤ 2) and greater than two children (>2) because for multivariate binary logistic regression to examine the relationship between the outcome variable (child ever born) and selected explanatory variables (independents). The variable was statistically recoded as “1” for less or equals to two children and “2” greater than two children.

3.7.2 Independent variables

There were six independent variables. All independent variables were analysed in order to determine the relationship with fertility among women in the Northern Cape Province of South Africa. Socio-economic and demographic variables namely: age, education, type of place of residence, ethnicity, contraceptive methods and marital status were used in this study. They were categorised as follows:

3.7.2.1 Age

Age is defined as the number of years a person has lived. In this study, age is a very important variable of fertility because as the age of women increases, the number of children ever born will also increase. For example, women who bear children at an early age (during their teenage years), will experience high total fertility rate (TFR) than those who start their childbearing at a later age. In this study, only women in childbearing years (15-49) were considered. Age was categorised as 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49.

3.7.2.2 Education

Education is defined as the process of learning, especially in schools and colleges/ universities in order to enhance knowledge and develop skills. Therefore, education is an important socio-economic determinant of fertility. For example, the higher education gained, the lower the fertility, and the lesser the education acquired, the higher the fertility. This is an indication that it is inversely

associated with total fertility rate (TFR). In this regard, education was categorised into four groups as follows: no education; primary education; secondary education; and tertiary education.

3.7.2.3 Type of place of residence

A type of place of residence is also one of the influential factors to consider when discussing fertility. This variable was categorised as rural and urban. Rural areas are those where the main means of livelihood is agriculture and non-formal sectors. Urban areas are those dependent on non-agriculture and formal sector occupation.

3.7.2.4 Ethnicity

Ethnicity refers to the fact of belonging to a particular race. Ethnicity is the forth variable and was categorised as Blacks, Coloureds, Indians/Asians and Whites.

3.7.2.5 Contraceptive method

Contraceptive method refers to the device or practice used to prevent women from becoming pregnant. It is sometimes referred to as family planning. In this study, contraceptive methods were categorised as no method used, traditional method used and modern methods used.

3.7.2.6 Marital status

Marital status refers to the condition whether a person is single or married. In this study, marital status is a very important determinant of fertility. This variable categorised into six groups as follows: never married, married, living together, widowed, divorced, and not living together.

3.7.3 Data Description and Operationalization

Table 1: Data Description, Variables and Operationalization.

variables	Description	operationalization
Dependent variable		
Children Ever Born (CEB)	Number of children the northern Cape women has	
Independent variables		
Age	Age of the respondents	1= 15-19 2= 20-24 3= 25-29 4= 30-34 5= 35-39 6= 40-44 7= 45-49 years
Education	Educational attainment of respondents	0= No education 1=Primary education (Grd 5- 7) 2=Secondary education (Grd 8-12) 3= Tertiary education
Place of residence	Place of residence of the respondents in Northern Cape Province	1=Rural 2=Urban
Ethnicity	Racial groups of the respondents	0=Blacks 1=Whites 2=Coloured's 3=Asians 4=others
Contraceptive methods	Contraceptive methods used by the respondents	0=Traditional methods ever used 3= Modern methods ever used 2= No methods ever used
Marital status	Marital status of the respondents	0= Never married 1= Married 2= Living together. 3= Widowed 4= Divorced 5= Not Living together

NOTE: Selected only respondents living in **Northern Cape Province**, which is equals to the total of 777

3.8 STATISTICAL ANALYSIS

Statistical analysis is the basis of any scientific inquiry or research. The purpose of statistical analysis is to increase and improve the conciseness, clarity and objectivity with which results are presented and interpreted and where an analysis does not serve these ends, it is probably not appropriate (Pallant, 2010). For the purpose of this study, data was sourced from SADHS (2003). The raw data was analysed using the Statistical Package for the Social Scientists (SPSS) software version 23. Any possible non-coded data was corrected for the purpose of the study. Three stages were used in analysing the data as follows: Univariate; Bivariate; and Multivariate.

3.8.1 Univariate analysis

Univariate analysis is the statistical characteristics of a single variable, including its distribution, its central tendency and its spread. In Univariate analysis one can plot the observation in the table or graph to examine the variable's distribution. Most often, frequency tables are generated which show the distribution of each of the variables responses on the average. Thus, mean, median, mode, proportion, variance and standard deviation are used to describe the responses per each variable in this case.

Therefore for the purpose of the study, frequency statistics and percentages were used. Frequency table which included selected demographic and socio-economic characteristics of women for the study in the Northern Cape Province. This analysis will cover the first objective of the study, to estimate the occurrence of the selected socio-economic and demographic variables of fertility.

3.8.2 Bivariate analysis

The second level of analysis is the bivariate analysis, which is one of the simplest forms of quantitative (statistical) analysis. It involves the analysis of two variables (often denoted as X, Y),

for the purpose of determining the empirical relationship between them. The X in this study represents the independent variables (socio-demographic factors) and Y the dependent variable (Children ever born); these are variables that are being investigated. Bivariate analysis was used to study the strength and differentials between independents and dependent variable Furthermore, to analyse how the independent variables influences the dependent by using Chi square. Chi-square test was used to prove if there is any significant association between independents and dependent variable. Chi-square test was done at (95%) confidence level with P-value set at (0.05).

Chi-square statistics take the form of:

$$\chi^2 = \sum \left(\frac{O - E}{E} \right)^2$$

Where O is the observed cell value in the cross-tabulation table and E is the expected value obtained by multiplying the row total with column total and dividing by the grand total in the table.

The statistics is distributed as $\chi^2_{\alpha, df}$ with df as the degree of freedom obtained by multiplying (number of column - 1) by (number of row - 1). Critical value of the test is therefore obtained using χ^2 distribution table, and in most cases computer generated significant levels are used to determine the rejection of the null hypothesis. Therefore, the analysis were performed through cross-tabulation technique. The second, third and fourth objectives will be covered using this bivariate analysis, more especially to examine the significant and the key socio-economic and demographic determinants associated with fertility in Northern Cape.

3.8.3. Multivariate analysis

The last level is multivariate analysis which is based on statistical principle of multi- variate statistics, which involves observation and analysis of more than one statistical outcome variable at a time. The multivariate analysis requires the constructions of a case variable matrix in which the rows of the matrix contain all measurements or recorded missing data for each case and

columns contain all measurements for each variety aspect to those cases. Specifically, for multivariate analysis, regression analyses are often applied.

Regression analysis includes;

- Simple regression model;
- Multiple regression model and,
- Logistic regression model.

The simple regression modelling approach used a continuous dependent variable y over an independent variable, x to predict relationship between the two variables. It is called simple regression modelling approach in the sense that it uses only one independent variable. This model is given below:

$$y = \beta_0 + \beta_1 x$$

Where y is the dependent variable, and x is the independent variable. The two parameters in the model are β_0 and β_1 , for constant and slope, respectively.

The multiple regression modelling approach considers using more than one independent variable. Thus, this is a more complicated model since it involves more than one independent variable. The model specification is given as,

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k$$

Where y is the dependent variable, and $x_1, x_2, \dots, x_k$ are the sets of independent variables in the modelling system. The parameters of the model are β_0 for constant, and $\beta_1 \dots \beta_k$ for slope regressors. These slope regressors measure the extent to which each of the independent variables, x_1, x_k relate to the dependent variable y .

The logistic regression modelling framework assumes that the dependent variable is not continuous, but categorical variable. That is, a dependent variable y with responses in category, say 1 “Yes”, 0 “No”. This model requires a set of covariates $X = x_1, x_2, \dots, x_k$ which act as independent variables in the model. Thus, the model is specified as,

$$\text{logit}[p(X)] = \log\left[\frac{p(X)}{1-p(X)}\right] = \beta_0 + X\beta$$

Where the logit means the “odd ratio” of success, $p(X)$ to failure, $1-p(X)$ in a binary scales 1 to 0. Taking the exponent of both sides of the equation, it is very straightforward to conduct maximum likelihood estimation to determine the parameters β_0 and $\beta = \beta_1, \beta_2, \dots, \beta_k$ in the model.

This work actually employs the multiple regression modelling, since the dependent variable (children ever born) is continuous variable. Therefore the Multiple logistic regression will cover the main objective of the study, to examine the selected socio-economic and demographic factors influencing fertility among women in the Northern Cape Province.

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CHAPTER FOUR

INTERPRETATION OF RESULTS

4.1 INTRODUCTION

The purpose of this chapter is to compute and analyse data as indicated in chapter three. The focus is on the three levels of analysis: univariate; bivariate; and multivariate of selected socio-economic and demographic variables of women in Northern Cape Province of South Africa.

4.2 Univariate analysis

This section examines the frequency distribution of women selected for the study in the Northern Cape according to the following characteristics: children ever born, age, and education, type of place of residence, ethnicity, contraceptive methods, and marital status.

Table 4.1 presents the socio-economic and demographic characteristics of Northern Cape women of reproductive ages (15-49), using the South Africa Demographic Health Survey (SADHS, 2003). According to Table 4.1 most of the women were in the age 15-19 year age group, which accounted 21.5%. However, the number of women tends to decrease as the age groups increases, for instance, from the age group 20-24 Northern Cape women account for 14.9% and age group 25-29 account for 12.7.

From 30-34 the table shows that there is a difference indicated by an increase with only 1%, whereas from the age group 35-39 Northern Cape proportion declined by 1.1%. Age group 40-44 presented the lowest accounting for 12% as compared to other groups.

The table 4.1 also shows that most of Northern Cape Women enrolled in schools, majority of them completed their secondary education, with the highest proportion of 62.2%. This means that Northern Cape women had a secondary education as their highest qualification. Its impressive

because it really shows that majority of the Black women at least completed the highest grades. However, there is a huge difference between Northern Cape women in Secondary education and tertiary education with an average of 55.4%, tertiary education account for 6.8% of women.

Based on the sample used in the table 4.1, more women reside in rural areas. 30.9% of Northern Cape women reside in urban areas, while 69.1% of women reside in rural areas. There is a slightly difference between women who reside in rural and urban areas with an average of 38.2%

Northern Cape Province is gifted with four major population groups, namely: Blacks, Coloureds, Indians/Asians, and Whites. The most populated group is coloured account for 62.3% followed by Blacks with 31.3%, then Asians with 5.7%. The whites presented the lowest accounting for 0.5%.

The results obtained in this study indicates that 73.5% of women in Northern Cape likely not to use any method of contraception during the time of the survey and what is interesting is that more women are in age group 15-19, of which it is not surprising at all to have large number of women not using any method. The results further indicates that 26.3% of women use traditional method and only 0.3% of women in Northern Cape use modern methods during the time of the survey

Table 4.1: Frequency distribution of women by Background characteristics (selected socioeconomic and demographic variables), Northern Cape Province, DHS 2003.

<i>Background characteristics</i>	<i>frequencies</i>	<i>percentages</i>
Age 5 year groups		
15-19	167	21.5
20-24	116	14.9
25-29	99	12.7
30-34	106	13.6
35-39	97	12.5
40-44	93	12
45-49	99	12.7
Total	777	100
Educational attainment		
No education	73	9.4
Primary education	168	21.6
Secondary education	483	62.2
Tertiary education	53	6.8
Total	777	100
Type of place of residence		
rural	537	69.1
urban	240	30.9
Total	777	100
Ethnicity		
Black/African	243	31.3
Coloured	484	62.3
Indian/ Asian	44	5.7
Whites	4	0.5
Other	1	0.1
Total	776	99.9
Contraceptive methods		
No methods used	571	73.5
Any traditional method used	204	26.3
Any modern method used	2	0.3
Total	777	100
Marital status		
Never Married	368	47.4
Married	206	26.5
Living together	114	14.7
Widowed	21	2.7
Divorced	19	2.4

Table 4.1 Continued

<i>Not living together</i>	<i>49</i>	<i>6.3</i>
<i>Total</i>	<i>777</i>	<i>100</i>
<i>Region</i>		
<i>Northern Cape</i>	<i>777</i>	<i>100</i>

4.3 Bivariate analysis of socioeconomic and demographic factors.

This section as evaluates association between Children Ever Born (dependent variable) and socio-economic and demographic variables of interest (i.e. Age Group, Type of Residence, Educational Attainment, Ethnicity, Marital Status and Contraceptives) in Northern Cape using Pearson Chi-Square at 0.05 significance level. The results obtained on Table1.2 indicate that there is statistical significance between Children Ever Born and Age Group, Type of Residence, Ethnicity, Educational Attainment and Contraceptives, while only Marital Status is statistically insignificant.

Looking closely to Age Group of women in Northern Cape, the study focuses on participants between the age of 15 and 49, and it is categorised into seven group (i.e. 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45 -49). The results obtained in this study indicate that 86.8% of the women in Northern Cape aged 15-19 likely to have no children and less than 14% on them have one or two kids. Results farther indicate that the group after 15-19 which is 20-24 it is the second highest group with number of women that have no children but what is interesting is that this group has the highest number of women that have at least have one kid as compared to other groups. Meanwhile, only 2% of women that are on the last age group do not have children, while on the other hand 3% of women on the same group have seven children with only 1% difference between those women with the least number of children and those with the most children on the last group. Results obtained shows that the more age increase the more we have increase in number of children per age group. By observation based on the results, most of women in Northern Cape are likely to

have the first child at age between 20 and 24, the results reveal 41.4% of them had first kid around that age range and most of women that are 24 years old or less are likely to have less than two kids. However, women older than 24 are likely to have more than three children. This contributed on 615.097 statistically significance with probability value of 0.000 on Pearson chi-square and it is concluded that the hypothesis is accepted because a statistical significant relationship was found between children ever born and age. It means that as the age of women increases, they become more exposed to pregnancy of which childbearing process also increases due to higher probability of getting sexual intercourse within the marriage establishment (Mosimanekgosi, 2016). Place of residence in literature like Flórez and Núñez (2001) has outline as one of the most important aspect influencing adolescent fertility and behaviour.

Looking at Type of Residence which is the second independent variable, on the results obtained it appears that 32% of women in rural areas in Northern Cape have no children as compared to 30.4% in urban that don't have kids also. There is small difference of 1.6% between women in rural and those in urban areas. Meanwhile, the results reveal that women in urban places of residence who have one child turn to have lower percentage as compared to their counterparts in rural areas, with 3.7% difference between the groups. However, the results are suppressing they show unexpected results on women with two, three, four and six children, they indicate urban arears have more children than women in rural arears, one would expect lower present of women with children in urban as compared to rural. In addition to this notion Flórez and Núñez (2001) argues that urban women turn to have lower fertility since they get married later, they have desire of small families and most of them are likely to have family planning as compared to those in rural places of residence. Access to relevant education at early age in rural places of residence can contribute to increase in number of childbirth. Therefore there is a relationship between children ever born and type of place of residence with the Pearson Chi-square of 615.097 and statistically significance with probability value of 0.000, this concluded that the hypothesis is accepted.

Level of education can also affect an individual in terms of place of residence, level of income and socio-economic status (Mostert et al., 1998:114). Table 1.2 indicate Education Attainment which is categorised into woman with no education, primary, secondary and tertiary education. The results reveal that the highest number of women who have no children are in their Secondary and tertiary education they have the same percentage of 37.7%. Meanwhile, women with no education without any surprises they have the least percentage with a difference of 26.7% compared to women in secondary or tertiary. However, the table shows that most (28.3%) of Northern Cape women enrolled with tertiary education have one child in comparison to the other groups and also, they are the most group that have 2 children. In the meantime, reveal surprising results indicating that women with no education are the second least group with one child and the least in those who have two children. What is interesting now is that women with no education have higher percentage when looking at women with three children, in comparison to tertiary education there is 19.9% difference. In addition, women who have only a few years of education, usually have more children compared to those with no education at all. (Mostert et al., 1998:115) argues that as levels of development increases, the relationship become monotonically negative. Table 1.2 indicate that tertiary educated women in Northern Cape are likely to have three or less children this is in line with Negolo and Lilian (2012) who argues that “longer periods in education increase the mean age of women at first childbirth and reduce the number of years in which they can have children”. This outline that women enrolled with tertiary education are likely to have small families as compared to those with no education, the higher the level of educational achievements contribute to higher labour force participation of women and change their desire for more than three children. The hypothesis is accepted because the Pearson Chi-square found to be 112.843 statistically significance with probability value of $P=0.000$ and it is concluded that there is a relationship between children ever born and educational attainment.

Better educated African women are also more knowledgeable of health programmes and contraceptive methods. As a result, they are more capable of ignoring undesired pregnancies and births (Negolo and Lillian, 2012). However, Table 1.2 indicate ethnicity which is categorised into four groups (Blacks, Coloureds, Indians, and Whites). The results obtained in this study indicate that 75% of white women are likely to have no children and it is also indicating that they are likely to have two children but what is surprising is there is nothing recorded on one child for white women in Northern Cape. The interesting part is that the results indicate that Indian and Asian are likely to have two or less children this groups have the highest percentage on one and two children ever born with 31.8% and 20.5% respectively. The hypothesis was accepted because a statistically significant relationship between children ever born and educational attainment. The Pearson Chi-square value was found to be 142.046 with the probability value of $P=0.000$ and it is concluded that there is a relationship between children ever born and ethnicity.

With regards to current marital status of women in Northern Cape, which is categorised into never married, married, living together, widowed, divorced, and not living together. The results reveal that 55.7% of women who are not married are more likely to have no children as compared to women who are married and also what is surprising is there is nothing recorded on no child for widowed and divorced. It also appears that 28.1% of women living together with their spouse they are more likely to have one child as compared to 24.2% of women never married. There is small difference of 3.9% between those never married and those living together with their spouse. Meanwhile, the results reveal that 36.8% of women who are divorced they are more likely to have two children as compared to 30.6% of women not living together with their spouse with the difference of 6.2% between those women. 15.5% of married compared to 15.8% of divorced women are more likely to have four children, only 0.3% difference. This contributed on 26.834 statistically significance with probability value of 0.726 on Pearson Chi-square and it is concluded

that the hypothesis is not accepted because a statistical significant relationship was not found between children ever born and current marital status.

Finally, table 1.1 indicates ever use of any methods of contraceptives as the last variable, and it is categorised into no methods, modern methods, and traditional methods ever used. The results obtained in this study indicates that 72.5% of women In Northern Cape use traditional methods early before they can have their first child and not surprisingly women using modern methods 50% of them never had a child and 50.0% of them had their first child which means Better educated African women are also more knowledgeable of health programmes and contraceptive methods. As a result, they are more capable of ignoring undesired pregnancies and births (Negolo and Lillian, 2012). By observation based on the results, most of women in Northern Cape

Table 4.2: Bivariate analysis by socioeconomic and demographic factors of women (15-49), Northern Cape Province, DHS 2003.

Characteristics		Total children ever born									Total	Pearson Chi-Square
		0	1	2	3	4	5	6	7	8		
Age 5-year groups	15-19	86.8%	12.0%	1.2%							100.0%	615.097390; P=0.000
	20-24	44.0%	41.4%	14.7%							100.0%	
	25-29	19.2%	37.4%	30.3%	12.1%	1.0%					100.0%	
	30-34	14.2%	23.6%	34.9%	16.0%	7.5%	2.8%	.9%			100.0%	
	35-39	4.1%	14.4%	28.9%	28.9%	11.3%	11.3%	1.0%			100.0%	
	40-44	9.7%	12.9%	22.6%	20.4%	16.1%	8.6%	6.5%	2.2%	1.1%	100.0%	
	45-49	2.0%	10.1%	15.2%	24.2%	16.2%	16.2%	13.1%	3.0%		100.0%	
Total		31.5%	21.4%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	
Type of place of residence	rural	32.0%	22.5%	19.2%	12.1%	6.0%	5.0%	2.2%	.7%	.2%	100.0%	615.097;P=0.000
	urban	30.4%	18.8%	19.6%	14.6%	7.9%	4.6%	3.8%	.4%		100.0%	
Total		31.5%	21.4%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	
Educational attainment	No Education	11.0%	16.4%	17.3%	27.4%	6.8%	12.3%	5.5%	1.4%	1.4%	100.0%	112.843;P=0.000
	Primary	20.8%	14.9%	18.5%	16.1%	12.5%	9.5%	6.0%	1.8%		100.0%	
	Secondary	37.7%	23.6%	19.0%	10.1%	5.2%	2.7%	1.4%	.2%		100.0%	
	Tertiary	37.7%	28.3%	26.4%	7.5%						100.0%	
Total		31.5%	21.4%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	
Ethnicity	Black/African	34.2%	19.8%	16.9%	15.2%	5.8%	6.6%	1.2%	.4%		100.0%	142.046;P=0.000
	Coloured	29.5%	21.3%	20.2%	12.4%	7.2%	4.5%	3.7%	.8%	.2%	100.0%	
	Indian/ Asian	36.4%	31.8%	20.5%	6.8%	4.5%					100.0%	
	Whites	75.0%		25.0%							100.0%	
	Other			100.0%							100.0%	
Total		31.6%	21.3%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	
Current marital status	Never Married	55.7%	24.2%	14.4%	3.3%	1.4%	.5%	.3%	.3%		100.0%	26.834;P=0.726
	Married	8.3%	14.6%	19.9%	24.8%	15.5%	10.2%	4.9%	1.5%	.5%	100.0%	
	Living together	15.8%	28.1%	26.3%	15.8%	5.3%	5.3%	3.5%			100.0%	
	Widowed		14.3%	19.0%	33.3%	14.3%	9.5%	9.5%			100.0%	
	Divorced		15.8%	36.8%	10.5%	15.8%	10.5%	10.5%			100.0%	
	Not living together	10.2%	18.4%	30.6%	20.4%	4.1%	10.2%	4.1%	2.0%		100.0%	
Total		31.5%	21.4%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	
Contraceptive methods used	Traditional methods	72.5%	11.8%	6.9%	3.4%	2.5%	2.0%	.5%	.5%		100.0%	319.026;P=0.000
	No methods	50.0%	50.0%								100.0%	
	Modern methods	16.8%	24.7%	23.8%	16.3%	8.1%	6.0%	3.5%	.7%	.2%	100.0%	
Total		31.5%	21.4%	19.3%	12.9%	6.6%	4.9%	2.7%	.6%	.1%	100.0%	

4.4. Multivariate analysis of variables

Table 4.3 below presents the multivariate binary logistic regression results for all women who gave birth to less or equals to two (≤ 2) children and greater than two (>2) children in Northern Cape Province of South Africa. The following variables were included in the model: Age by 5-year

groups, level of education, Place of residence, ethnicity, contraceptive method used and marital status. According to these results, table 4.3 revealed that there is a significant association between fertility (measured as the total number of children ever born (CEB)) among women of Northern Cape Province and selected socioeconomic and demographic factors. However, out of six (6) socioeconomic and demographic variables included in the model, only three (3) were found to be significant, namely: Age by 5-year groups, education and marital status. The model fitness was assessed by using the Omnibus Test of model Coefficient which indicated Chi-square to be $X^2 = 420.935$ and p value to be $p = 0.000$, this shows the model is a good fit.

In terms of 5year age groups of respondents, Table 4.3 shows that women who aged 30-34, 35-39, 40-44, and 45-49 years are less likely to participate in childbearing process. Women aged 45-49 years were 58.2% ($OR = 0.418^{**}$, $CI = 0.21, 0.832$) less likely to give birth compared to those aged 15-19 years. This might be because of some they are in the ages of experiencing menopause of which this lead them to be at the lower risk of falling pregnant or participating in childbearing process.

With regards to level of education, women with primary education were 422.7% ($OR = 5.227$, $CI = 1.357, 20.139$) more likely to participate in childbearing process than those with no education. The risk of giving birth decreases with an increase in level of education. Table 4.3 revealed that women in secondary and tertiary education were 418.5% ($OR = 5.185$, $CI = 1.485-18.097$) and 328.1% ($OR = 4.281$, $CI = 1.284 -14.274$) more likely to delay getting involved in childbearing. This is not surprising as it is well-known that education has a positive effect on fertility. Women who are more educated more likely to dedicate their time and energy to their careers and consequently, postpone giving birth earlier.

Table 4.3: Results of the multivariate binary logistic regression model showing odd ratios socio-economic and demographic variables of fertility, Northern Cape Province, DHS 2003

Variables	B	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Age (15-19)		6	0			
Age (20-24)	-20.878	1	0.995	0	0	.
Age (25-29)	-21.455	1	0.995	0	0	.
Age (30-34)	-2.542	1	0	0.079****	0.035	0.179
Age (35-39)	-1.942	1	0	0.143****	0.071	0.288
Age (40-44)	-0.945	1	0.006	0.389**	0.198	0.763
Age (45-49)	-0.873	1	0.013	0.418**	0.21	0.832
No education		3	0.078			
Primary education	1.654	1	0.016	5.227**	1.357	20.139
Secondary education	1.646	1	0.01	5.185**	1.485	18.097
Tertiary education	1.454	1	0.018	4.281**	1.284	14.274
Urban areas	-0.212	1	0.387	0.809	0.5	1.308
Blacks		4	0.156			
Coloureds	19.668	1	1	347978211.4	0	.
Indians/ Asians	19.473	1	1	286354934.9	0	.
Whites	18.09	1	1	71877148.06	0	.
Others	-0.118	1	1	0.889	0	.
Modern methods	0.002	1	0.997	1.002	0.247	4.068
Never married		5	0			
Married	-1.304	1	0.003	0.271**	0.116	0.634
Living Together	0.909	1	0.02	2.481**	1.157	5.322
Widowed	0.039	1	0.928	1.04	0.447	2.416
Divorced	0.954	1	0.135	2.596	0.742	9.08
Separated	0.356	1	0.582	1.428	0.402	5.067

Hint: **** p< 0.000 , ***p< 0.001, **p <0.05, *p<0.01 , ° reference point, C.I: Confidence interval, OR= Exp (B)

In terms of marital status of women, Table 4.3 above, shows that married women and those living together with their spouses, are likely to participate in childbearing process than those never married. The table also shows that women living together 148.1% (OR=2.481, CI=1.157-5.322) are more likely to give birth to more than two children.

Based on the results revealed by Table 4.3 above, there was no significant association in terms of contraceptive methods used, ethnicity, and place of residence.

4.5. Limitations of the study

This study is about selected socio-economic and demographic factors influencing fertility among women in the Northern Cape Province of South Africa. Great emphasis was on secondary information. Such information is important as it is frequently accessible. However, the observed results obtained in this study could have been biased by number of aspects. The first limitation was the use of old data source (the 2003 South African Demographic Health Survey) (SADHS, 2003). Secondly, the issue of cross-sectional nature of data could have affected results due to censoring of women who conceived after the survey. Thirdly, some missing variables could have led to serious errors in the accumulation of data regarding the number of kids ever conceived. Women have a tendency to overlook some children, especially those living in different households and those who have passed on. Last but not least, data also show some discrepancies, especially with regard to ethnicity (only four (4) white women were interviewed during the study). This is an indication that whites are underrepresented in the Northern Cape Province. This greatly affected the findings of the study and might have distorted analysis of data. The researcher believes the higher the sample size, the lesser the limitations, and the lesser the sample size, the higher the limitations

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of the results

The purpose of this study was to determine whether selected socio-economic and demographic factors influence fertility among women (15-49) years in the Northern Cape Province in a positive or negative manner. The socio-economic and demographic factors were age, education, place of residence, ethnicity, contraceptive methods and marital status. The study objectives were to examine the selected socio-economic and demographic factors influencing fertility among women in the Northern Cape Province of South Africa. In addition, the objectives of the study were answered by means of employing univariate analysis (Frequencies), bivariate analysis (Chi-square test) and multivariate analysis (binary logistic regression).

Based on the bivariate analysis, the results revealed that there is a statistical significance between the age of women and fertility. More especially when the results revealed that 33.3% of women aged 45-49 years had more than three children, during the time of the survey, 24.7% of women aged 30-34 were more likely to have two children, 28.9% women aged 20-24 were have one child and less likely to have more than two children during the time of the survey, and as for women aged 15-19 years 59.2% of them were not contributing much on childbearing process. The study shows that as the age of women increases, the higher the fertility. This might be because of the higher the age the more being exposed to sexual intercourse whether married or not married.

In relation to educational levels acquired by women, the bivariate results revealed that there is also statistical significance between educational of women and fertility. The results showed that about 74.3% of women having secondary education were more likely not to give birth as compared to those with no education. Furthermore, the findings showed that 1.9% of women having tertiary education were less likely to give birth to more than two children as compared to 44% of those in

secondary education. This finding proved the hypotheses right because the higher the education earned by women the lesser women participating in childbearing process. It was further revealed that level of education plays a major role in influencing late entry into marriage and enhances late childbearing.

Also with regards to the place of residence, the bivariate results revealed that place of residence influences fertility among women in the Northern Cape Province. Women residing in poor rural areas were found to experience early births, leading to high birth rates than those in urban areas.

Ethnicity also proved to be not significant in influencing early births, for instance, Black and Coloureds women in the Northern Cape Province were found to have more births than other population groups, the Whites and Asians. This was due mainly because Coloureds were the majority who were residing in Northern Cape province during the time of the survey by 484, followed by Blacks (243), and Asians were (44) and Whites were (4) during the time of the survey. This showed one of the limitations of the study because White were misrepresented based on the results during the time of the survey.

With regard to the use of contraceptive, women in the Northern Cape (98.7%) use modern contraceptive methods after giving birth to more than two children while those who have never given birth before, stick to traditional methods of contraception. This suggests that the fewer the number of children, the lower the use of modern contraceptives, and the higher the number of children, the more the use of contraceptives.

Indeed, marriage plays a significant role in overall fertility levels in the Northern Cape Province of South Africa. Statistically, women in the Northern Cape who are married or living together, and those separated; tend to have more than two children compared to those who had never married before. This is because once women and men are married, they are expected to bear and raise children. This encourages women to have children at a very young age. This also explains why

married women tend to have more children than unmarried women of the same age at the end of their reproductive period.

Despite that bivariate analysis showed that four independent variables namely age, education, contraceptive and marital status are significantly associated with fertility, the multivariate binary logistic regression results failed to show statistical association to some other variable. The model was assessed using Omnibus test of coefficient which indicated Chi-square to be 464.818 and p value to be $p=0.000$ out of six independent variable only 3 were found to be significant than others, age, education and marital status.

5.2. Conclusion

All selected independent variables were tested in the study showed a significant relationship with children ever born (the dependent variable). The aim of the study was to analyse and observe the relationship between selected socio-economic and demographic variables. The researcher was able to clearly show the relationship, the aim and objectives of the study. Through the literature review (Chapter 2) and the statistical results presented in Chapter 4, as well as the techniques described in Chapter 3, the researcher was able to answer the research hypotheses as articulated in 1.5, as well as the research objectives articulated in 1.4.

5.3. Policy and programme recommendations

In order to achieve a decline in fertility levels in the Northern Cape Province of South Africa, the country and the province will need to invest in both short and long-term strategies such as improving the quality of life of people, improving family planning as well as encouraging more women to get educated. This will go a long way in reducing fertility at the level of the province. If adequate efforts are put in place and closely monitored, the province might achieve the national development goal articulated in Vision 2030.

The following are key policy and programme actions recommended to facilitate a decline in fertility rates:

1. **Improving the quality of life of people.** This could be done by empowering women, making jobs available for them and providing them with quality education rather than providing them with contraceptives.
2. **Intensify community education and communication.** Programmes that can help in reducing fertility rate should be made known to the public. This might assist community members in rural and urban areas to see the importance of reducing the number of children they give birth to.
3. **Improving contraceptive prevalence and health awareness.** Stakeholders should ensure that prevalence of contraceptives and health awareness programmes do not only aim at women but directed at both men and women. For instance, if men are involved in reproductive decisions, it could assist them in understanding the importance and to accept and endorse family planning methods could slow down fertility levels.
4. **Intensify ongoing interventions by reducing child mortality and increasing child survival.** This can be achieved through active promotion of programmes for child immunisation and eradication of infectious diseases. This can go a long way in building parents confidence in their families' future and willingness to invest in children's schooling.
5. **Preventing early marriages.** Families with low socio-economic status are more likely to give children into early marriage. If government enacts and enforces law to prevent early marriages, fertility rates could be reduced.
6. **Promoting school progression.** The government should come up with strategies that will motivate young girls to go to school and to understand the importance of higher education, as suggested in one of the Millennium Development Goals (MDGs). This can

also be achieved if government provides economic support to keep young girls at school, especially those from poor backgrounds.

7. **Public boards.** In order to allow women use any desired method of contraceptive to control fertility, posters should not only be placed at medical centres but should also be placed where people can see them.
8. **The impact of parent-adolescent communication.** Parents are encouraged to monitoring and supervise their children. For instance, young girls would be able to prolong sexual activity, or even abstain if monitored or supervised by parents. This implies that the type of relationship teenage girls have with their mothers, could greatly influence their behaviour as well as their thinking capacity regarding sexuality.

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