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**WESTERN CAPE**

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**Department of Statistics and Population Studies**

**FERTILITY TRENDS AND DETERMINANTS AMONG WOMEN OF CHILDBEARING  
AGE (15-49): A COMPARATIVE STUDY OF SOUTH AFRICA AND KENYA.**

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## **ABSTRACT**

### **Fertility trends and determinants among women of childbearing age (15-49): A comparative study of South Africa and Kenya.**

Fertility behavior in women plays a vital role in society. Fertility, mortality and migration are directly related to the population growth in society and its performance. Fertility refers to births by women in the population, mortality refers to deaths (infant, neonatal, maternal and paternal death etc.) and migration refers to the in and out movement of people from one region or country to another.

Childbearing involves a male and female either married or not married. Fertility is essential in the implementation and development of reproductive health programs and policies. Therefore, it's important to look into the issue of childbearing in women of reproductive age (15-49). Information on contraceptive use, family planning, the desired number of children, place of residence, unmet need for contraceptive, unmet need for spacing, unmet need for limiting, currently working women, marital status, and population groups in South Africa 2016 and Kenya 2014 was analyzed (Univariate and Bivariate Analysis) using Statistical Packages for Social Sciences (SPSS) and Chi-square test to determine the relationship or association between variables (dependent and independent variables).

The raw data was extracted from the South Africa Demographic and Health Survey 2016 (SADHS) and Kenya Demography Health Survey 2014 (KDHS). Demographic and Health Survey provided well-detailed information and evidence on fertility trends and other relatives matters. The trend of Total Fertility rates (TFRs) and Age-Specific Fertility rates (ASFRs) in South Africa in 2016 and Kenya in 2014 showed a significant decrease over time particularly in Kenya in 2014. Fertility is declining in South Africa and Kenya which indicates that women are becoming more conscious and knowledgeable about their fertility behavior, birth control, birth spacing, and sterilization etc.

## KEYWORDS

Fertility

Population

Women (15-49)

Family planning

Contraceptives,

Demographic and Health Survey (DHS)

South Africa

Kenya



## DECLARATION

I, **ELIZABETH AVOSUAHI DANIA**, hereby affirm that “**FERTILITY TRENDS AND DETERMINANTS AMONG WOMEN OF CHILDBEARING AGE (15-49): A COMPARATIVE STUDY OF SOUTH AFRICA AND KENYA**” is my work, that has not been submitted for any degree or examination in any academic institution, and that all the sources I have used or quoted have been indicated and acknowledged by complete reference.

Signature.....

April 2022.



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## CHAPTER 1

### 1. Introduction

#### 1.1 Background

Fertility is one major components population growth in any given country. Fertility is a prime determinant of age structure, family composition and population growth rates. The total fertility rate (TFR) and age-specific fertility rates (AFRSs) are common measures of fertility levels. General determinants of fertility are demographic, cultural and social-economic as: age (age at marriage and age at first birth), education, religion, employment, contraceptive use, health, income level, immigration, child labor, divorce, women maltreatment, etc.

Fertility decline can be explained by the increase in age at marriage, women's educational attainment, type of place of residence, contraceptives use, women's occupational status, improvement in health care services, household income etc. Family planning programs, contraceptives use and condoms are key indicator for fertility changes.

Dissimilarities in fertility between nations: There are large fertility differences by geographic region and by population groups, socioeconomic groups and cultural groups within the countries. This study will present a detailed comparison of the trends in fertility and their determinants between two countries, South Africa in the year 2016 and Kenya in the year 2014 using Demographic and Health Survey (DHS) reports. Demographic and Health Survey reports have been intensively used as a source of data to highlight the trends of fertility, fertility differentials, contraceptives use, infant and child mortality, maternal health care, child health, nutrition of the children, etc.

#### **Fertility Trends in South Africa**

In the past 50 years, there has been a notable demographic transition as fertility and fertility levels have steadily declined in most parts of the world (Roser, 2017). Trends to lower fertility seem to be the norm as the number of children born per woman globally has fallen to about 2.5, although sub-Saharan Africa lags behind most regions in the world with a total fertility rate (TFR) of 4.9 children (UN/Population Division 2017). Unlike most countries in sub-Saharan Africa, fertility levels have also been declining in South Africa; indeed, South Africa has one of the lowest fertility rates in the region, with 2.6 children per woman (South Africa DHS, 2014). In the pre-modern era,

the fertility rate was 4.5 to 7 children per woman and people had many more children than today (Roser, 2017). The number fluctuated over time and there were some differences between countries, two centuries ago this was true for the US, the UK, Russia, India, China and many other countries (Roser, 2017).

Since 1998, South Africa has experienced a decrease in fertility rate with the total fertility rate dropping from 2.9 in 1998 to 2.6 in 2016 (Stats SA). Report by Statistics South Africa (Stats SA) titled “Unwanted Fertility in South Africa” reveals that about 20% of all births in the five years preceding the 2016 Demographic and Health Survey (including pregnancies at the time), happened when women were not planning on having any more children. Women were asked about the planning status of each birth they had. Typical questions asked in the surveys are: “At the time you became pregnant with [name] did you want to become pregnant then, did you want to wait until later, or did you want no more children at all?”

According to the report, there was an increase in the percentage of unwanted births from 17.3% in 1998 to 20.4% in 2016. (Stats SA)

**Figure 1.1: Increase in the percentage of unwanted births records between 1998 and 2016 (Statistics South Africa)**



**Source:** National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC) and ICF, 2019; Department of Health, 1998.

Report from Unwanted fertility in South Africa 2020, published by Statistics South Africa (Stats SA) noted that women with higher levels of education were more likely to have lower percentages of unwanted births. In 2016, unwanted births to mothers with no education almost doubled from 24.8% in 1998 to 46.3% in 2016. Mothers with a tertiary education (11.4%) were four times less likely to have unwanted births compared to mothers with no education (46.3%). It is therefore important to note that education has a major role to play in the fertility rates and fertility behaviour of women (DHS report).

The provincial numbers indicate that the Eastern Cape (26.4%), KwaZulu-Natal (25.1%) and Mpumalanga (25.1%) had the highest percentage of unwanted births in the year 2016. These provinces, including North West (19.4%), were the top four provinces that observed high unwanted births in the year 1998. The increase in unwanted births was more pronounced in the Northern Cape and Western Cape where unwanted births increased from 6.6% to 16.0% and 11.7% to 20.9% from 1998 to 2016, respectively. According to the report, the North West is the only province that observed a decrease in unwanted births, from 19.4% in the year 1998 to 15.7% in the year 2016.

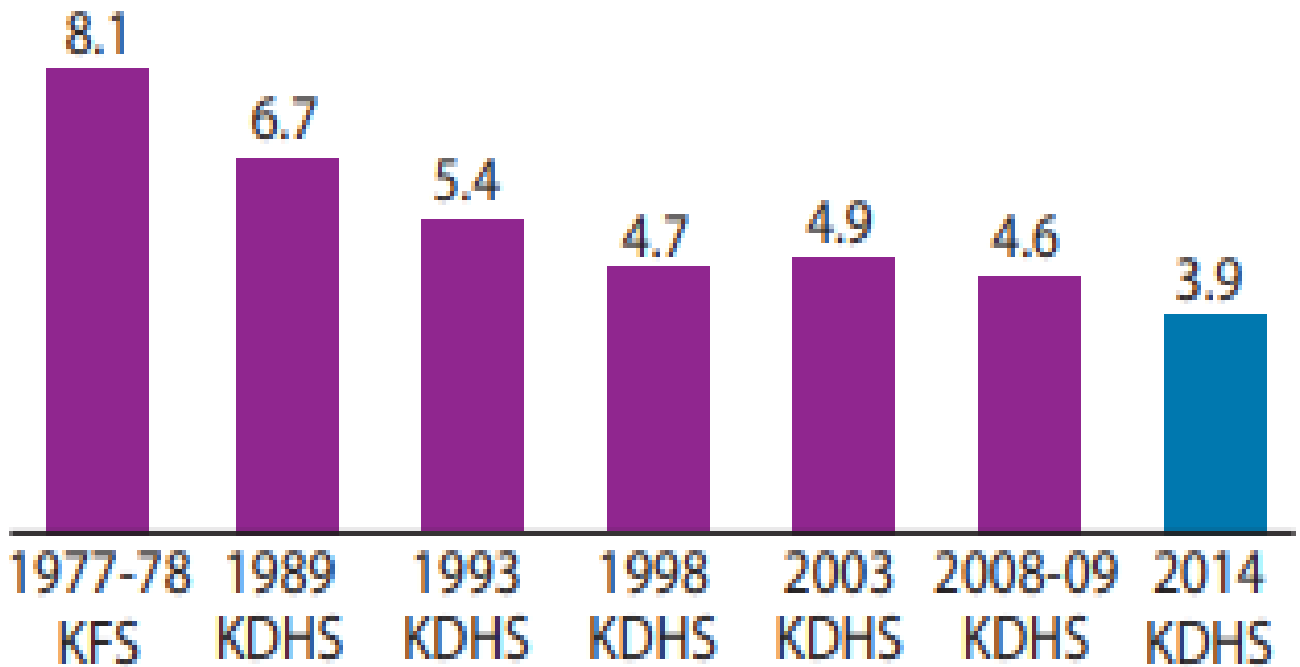


### **Fertility trends in Kenya**

In 1968, Kenya was one of the first countries of sub-Saharan Africa to develop a national population policy (Askew, 2009). This policy, however, remained largely dormant until the findings from the World Fertility Survey (WFS) in 1977 showed that Kenya had one of the highest fertility rates in the world, with a total fertility rate (TFR) of 8 children per woman (Askew, 2009). This statistic served to focus both policy and public attention on fertility issues and to renew the population policy, with the result that substantial national and international support was dedicated to developing and strengthening a healthy national family planning programme (Askew, 2009). The impact of this investment of human and financial resources was remarkable, as the contraceptive prevalence rate increased rapidly and fertility declined in the following decade. Indeed, the decline in fertility between 1977 and 1998, from 8.1 to 4.7 births per woman, was one

of the most rapid ever documented. This consistent decline in fertility led to projections that the TFR would decline gradually to about 3.5 by 2008 (Askew, 2009).

**Figure 1.2: Trends in total fertility rate (KDHS) from 1978-2014**



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**Source:** Kenya demographic and health survey key findings (KDHS) 2014/2015.

There was a decline in the total fertility rate (TFR) from the 8 children per woman in 1977-1978 Kenya Fertility Survey (KFS) to 1989 Kenya Demographic and Health Survey 6.7 children per woman, and the 1993 Kenya Demographic and Health Survey of 5.4 children, after which time there was further decline to 4.7 children in the 1998 Kenya Demographic and Health Survey. Fertility seemed to rise afterwards, to a TFR of 4.9 children reported in 2003. The decrease in the TFR from 4.9 and 4.6 in the 2003 and 2008-09 KDHS surveys, respectively, to the current 3.9 indicates that Kenya's fertility is again on the decline. The TFR of 3.9 is the lowest ever recorded in Kenya.

## 1.2 RESEARCH QUESTIONS

This study aims to answer this vital question on fertility. Fertility has been declining in Kenya and South Africa according to reports from Demography and Health Survey (DHS).

- ❖ High fertility associated with the younger cohort or the older cohort?
- ❖ Does immense income triggers high fertility rates among women in South Arica and Kenya? Do women actively involved in labor force have a smaller number of children?
- ❖ What is the relationship between women's age and fecundity? Does mother's age influence number of children in South Africa and Kenya?
- ❖ Education a major control on fertility behavior in women in South Africa and Kenya?
- ❖ What are the implications of place of residence on fertility in South Africa and Kenya?
- ❖ Does every woman within the scope of childbearing age (15-49) have access to family planning, contraceptives, condoms, health cares centers? Which is the most commonly used contraceptive methods among women?

## 1.3 PROBLEM STATEMENT

The study will focus on demonstrating fertility, trends in fertility, determinants (factors) affecting fertility, fertility behaviour and use of contraceptives in women of childbearing age (15-49): A comparison of South Africa and Kenya.

Fertility transition has begun in most developing countries and South Africa and Kenya is not left out of this transition. Reports from Demography and Health Survey are well-informed with trends in fertility. Findings have it that notable change has occurred in the fertility preferences of Kenyan women and South Africa women (KDHS AND SADHS). In the past, Kenyan women do not seem to agree/believe in modern contraceptives to help prevent unwanted pregnancies. They rather had other means to delay pregnancies which was acceptable to them and not too costly in socio-psychological and economic terms (Robinson, 1992). This could be the reason associated with Kenya's high fertility.

However, in South Africa women prioritize family planning and contraceptives as a means to prevent unwanted pregnancies. The prevailing differences in reproductive women is another factor to consider in fertility.

Secondly, illiteracy is rampant in rural areas due to inaccessibility to schools, transport, school fees etc. lack of education in rural areas is related with large number of family size, non-use of contraceptives methods, infant mortality, maternal mortality.

Establishing the above factors

In addition, Kenya has had 6 good demographic and health surveys (KDHS) which took place in the year 1989,1993, 1998,2003,2008 and 2014 while South Africa had just 3 Demographic and health surveys (SADHS) in the year 1998 2003 and 2016. Due to global difference in time coverage of DHS surveys, this research study will be restricted to the most recent Demography and Health Surveys: Kenya Demographic and Health Survey 2014 (KDHS) and South Africa Demographic and Health Survey 2016 (SADHS) respectively.

#### **1.4 AIM OF THE STUDY**

- ❖ The study will provide an insight on fertility trends and determinants amongst women of childbearing age (15-49) in South Africa and Kenya respectively

#### **OBJECTIVES OF THE STUDY**

The study has been put in place to further disintegrate the understanding of fertility behavior in women of reproductive age (15-49) from Demography and Health Survey for South Africa and Kenya. Women outside the reproductive age scope of 15-49 were excluded from the analysis.

- ❖ To explore the influence of family planning programs, contraceptives, condoms and IUDs that have been put in place to aid women in their fertility journey, birth spacing/ pregnancy and sterilization.
- ❖ To identify the root cause that leads to increase/decrease and stall in fertility and fertility behaviour of women of childbearing age (15-49).
- ❖ To point out measures South Africans and Kenyans used to curb fertility increase among women of reproductive age (15-49).

#### **1.5 OVERVIEW OF THE RESEARCH METHODS**

This study will explore the trends in fertility and its determinants among women of child bearing age (15-49) in South Africa and Kenya. The research is a quantitative study and the survey data is

derived from South Africa Demographic and health survey 2016 (SADHS) and Kenya Demographic and Health Survey 2014 (KDHS).

The South Africa Demographic and Health Survey (SADHS) covers all the 9 (nine) provinces in South Africa with a total of 15,292 selected households for the sample, of which 11,083 households were successfully interviewed in the SADHS, yielding a response rate of 83.4%.

The Kenya Demographic and Health Survey (KDHS) covers all the 8 (eight) provinces in Kenya with a total of 39,679 selected households for the sample, of which 36,430 households were successfully interviewed in the KDHS, yielding a response rate of 99.0%.

Survey data will be analyzed using some statistical tools such as SPSS (Statistical Package for Social Science), univariate analysis (summarizes single variables using frequency distribution and percentages), bivariate analysis (cross-tabulation of two variables to determine the relationship between independent and dependent variables) and Chi-square (Chi-square test the hypotheses between dependent, independent variables and also reveals the p-values).

## 1.6 SIGNIFICANCE OF THE STUDY

- ❖ This study will build and upgrade on the trends and determinants of fertility among reproductive aged women (15-49) in South Africa and Kenya. It will also present an analysis to further illustrate and enhance the understanding of childbearing in women.
- ❖ The study will be of great relevance in order to work-out plans for current and future programs on women's reproductive health and childbearing, education, health centers etc.

## 1.7 DEFINITION OF KEY TERMS

- ❖ **Fertility:** The actual reproductive performance of an individual, a couple, a group, or a population.
- ❖ **Age-specific fertility rate (ASFR):** The age-specific fertility rate is defined as the number of births per year, per 1000 women of a specific age. Age- specific fertility rates may be computed either for a single year of age and for a 5 years age interval.
- ❖ **Total fertility rate (TFR):** This is the average number of children a woman would have over the course of her life if she were to pass through her childbearing years conforming to the age-specific fertility rates observed for a given year.

- ❖ **Childbearing Years:** The reproductive age span of women, assumed for statistical purposes to be 15-44 or 15-49 years of age.
- ❖ **Contraceptives Use:** The percentage of currently married or “in union” women (unless otherwise indicated) of reproductive age who are currently using any form of contraception. Modern methods comprise clinic and supply methods, including the pill, injectable, implant, IUD, condom, and sterilization.
- ❖ **Contraceptive Prevalence:** Percentage of couples currently using a contraceptive method.
- ❖ **Family planning:** The conscious effort of couples to regulate the number and spacing of births through artificial and natural methods of contraception. Family planning connotes conception control to avoid pregnancy and abortion, but it also includes efforts of couples to induce pregnancy.
- ❖ **Fecundity:** The physiological capacity of a woman to produce a child. Women of child-bearing age (15-49)
- ❖ **Replacement-level fertility:** is the total fertility rate (TFR) that would produce a population growth rate of 0.0 if it were experienced for a long time and there were no change in mortality and no in-or out-migration. For most purposes. 2.1 is a reasonable approximation of replacement-level fertility. it is larger than 2.0 because some female births do not survive to childbearing age (RR Rindfuss, 2015).
- ❖ **Child marriage:** Defined as marriage before age 18 years of age. UNICEF

## 1.8 CHAPTER SUMMARY

Fertility in South Africa and Kenya has been declining for some decades now. Some reasons for the decline are the use of contraceptives and family planning programs, increase in age at marriage, increase in age at first birth, extension of a comprehensive health care system, fall in the rate of infant mortality, education of women etc.

The most recent findings from the Kenya Demographic and Health Survey (KDHS) and Kenya Fertility Survey (KFS) reports in the late 1970s fertility rate was around 8.1 children—considered to be the highest in the world. After an initial decline, it remained stagnant for about a decade around 1998 at a level of 4.7 children per woman to 4.9 children per woman in the year 2003. But most recently, the TFR experienced a rather steep dive to 3.9 children for the 3 years preceding



the 2014 Kenya Demographic and Health Survey and even 3.7 in the 2015 Malaria Indicator Survey.

This study attempts to find out the factors behind these reductions, and whether the same factors hold in both countries (South Africa and Kenya) of study, as fertility is vital in population projection, health planning, education etc.

## **1.9 THESIS OUTLINE/ CHAPTER STRUCTURE**

This study on fertility trends and determinants among women of reproductive age (15-49): A comparative study of South Africa and Kenya. Consist of five chapters, the chapters are outlined as follows:

### **Chapter 1: Introduction**

This chapter presents a background on past fertility trends for South Africa and Kenya, research questions which the study will answer, problem statement, aim and objectives, overview of the research methods, significance of the study and definition of key terms used in the study.

### **Chapter 2: Review of related literature**

This chapter laid out some theories of fertility, understanding the causes and movement in fertility changes that may either increase, decrease or stall fertility. Fertility changes in women differ across regions and cultures.

Empirical literature reviewed some related literature and also highlighted some gaps in the study.

### **Chapter 3: Research methodology**

This chapter covers the methodology approach used in the study. Which is a secondary data derived from South Africa Demographic and Health Survey (SADHS) for the year 2016 and Kenya Demography and Health Survey (KDHS) for the year 2014 respectively.

### **Chapter 4: Data analysis and result**

Data analysis was performed with the help of two computer software to present the result of the analysis, these software's are SPSS (statistical package for the social sciences) and Microsoft Excel. graphs, tables and figures that outline the results from the survey of this study's quantitative phase.

## **Chapter 5:** Discussion and conclusion

The research presents the discussion, implication for future research, recommendation, conclusion which was reached based on the reviewed literature and empirical findings



## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### 2. Introduction

Fertility rate is a measure of the average number of children a woman will have during her childbearing years (15-49). The fertility patterns are different across countries and over time. Many different factors can affect fertility rates. Many of these factors are difficult to measure because they involve subjectivity and some of them may not apply across all cultures, traditions and disciplines.

#### 2.1.1 General overview of world fertility

Over the last 200 years of human history, every successfully developing country experienced a fertility transition: starting at initially high levels, fertility rates went down towards a low plateau, oftentimes below replacement level (H Strulik, 2013). The Western European countries experienced the transition first around the end of the nineteenth century (H Strulik, 2013). One salient feature of their transition was the chronological proximity between the onsets of mortality decline and fertility decline. This chronological association became much less visible for countries which experienced the fertility transition later (H Strulik, 2013). If the fertility decline took off in the 1980s or later, it followed the mortality decline with an average delay of 40–45 years (Reher, 2004). From the latter part of the nineteenth century and lasting until about 1930, mostly European populations took the lead in implanting different measures of fertility control. During the second half of the century, fertility decline spread nearly everywhere in the world with very few expectations.

Some economic indicators suggest that European countries are currently moving out of the great recession, whereas fertility trends are not so positive (D. Vignoli, 2020). For instance, in 2009 Northern European economies resumed economic growth, but their total fertility started to decrease substantially (D. Vignoli, 2020). In Norway, total fertility dropped from 1.98 in 2009 to 1.6 in 2018, the lowest ever in peacetime; similar changes, and even lower fertility levels, have been observed in Denmark, Finland, Iceland and Sweden (C. L. Comolli, 2021). On the other side of Europe, Mediterranean countries such as Italy, Greece and Spain, after a period of fertility rebound, in the same period, a regime of lowest–low fertility, with total fertility around 1.3 (D.

Vignoli, 2020). According to (C. L. Comolli, 2021) in the Nordic countries: Denmark, Finland, Iceland, Norway, and Sweden are widely recognized for having generous family policies, protective and employment-oriented welfare systems, high rates of labor-force participation among both men and women, and, until very recently, comparatively high fertility levels. After the large decline in fertility across Western countries in the 1970s, total fertility rates (TFRs) in the Nordic countries remained in the range between 1.7 and 2.3 children per woman for several decades (1980–2010). Only in Denmark and Sweden did it temporarily fall to 1.4 and 1.5 children per woman in the mid-1980s (Denmark) and mid-1990s (Sweden), respectively. During the same period, most other countries in Europe consistently registered fertility rates below 1.7, and many Southern and Eastern European countries even experienced lowest-low fertility rates below 1.3 children per woman (HP Kohler, 2002). Scholars sometimes tend to attribute the high fertility in the Nordic countries to their comprehensive welfare states and their family policies that support the reconciliation of employment and family commitments for both women and men (McDonald, 2000; Esping-Andersen, 2002). It has been argued that these policies enabled the Nordic countries to maintain their period fertility around the replacement level. However, this seems to change. Since 2010, the TFR has been declining in all Nordic countries, hitting the historically low levels of 1.35 children per woman in Finland in year 2019, 1.53 in Norway in year 2019, and 1.71 in Iceland in year 2017 (Nordic Statistical Central Bureaus 2018, 2019 and 2020). This ongoing decline in period fertility came largely unexpected. (C. L. Comolli, 2021). The timing of the onset of fertility declines suggests a link to the Great Recession (the financial and economic crisis that hit Europe after 2007). (C. L. Comolli, 2021)

In general, studies find that fertility declines are temporary and constitute mainly a postponement of births among younger women (T Sobotka, 2011). Several studies also indicate that fertility responses may vary across recession episodes, countries, parities, age groups, and social strata (Sobotka, 2011; Neels, 2013; Comolli, 2018; Bellido, 2019).

Recent report by United Nations on World Fertility Surveys (WFS) shows that Total fertility has fallen markedly over recent decades in many countries, such that today close to half of all people globally live in a country or area where lifetime fertility is below 2.1 live births per woman, which is roughly the level required for populations with low mortality to have a growth rate of zero in the long run. The global fertility rate declined from 3.2 live births per woman in 1990 to 2.5 in

2019. But in sub-Saharan Africa, the region with the highest fertility levels, total fertility fell from 6.3 births per woman in 1990 to 4.6 in 2019. Over the same period, fertility levels also declined in Northern Africa and Western Asia (from 4.4 to 2.9), Central and Southern Asia (4.3 to 2.4), Eastern and South-Eastern Asia (2.5 to 1.8), Latin America and the Caribbean (3.3 to 2.0), and Oceania (4.5 to 3.4). In Australia and New Zealand and in Europe and Northern America, fertility in 1990 was already below 2.0 births per woman, and it remains so today, with 1.8 births per woman, on average, in Australia and New Zealand in 2019 and 1.7 in Europe and Northern America. In some European countries, there have been slight increases in fertility. The most rapid regional fertility declines in recent decades have been in Eastern and South-Eastern Asia, Latin America and the Caribbean, Central and Southern Asia, and Northern Africa and Western Asia

Fertility behavior in sub-Saharan Africa, like other parts of the world, is determined by biological and social factors. Several factors have contributed to sustain relatively high levels of fertility in most of sub-Saharan Africa. These factors include high levels of infant and child mortality, early and universal marriage, early child bearing as well as child bearing within much of the reproductive life span, low use of contraception and high social value placed on child bearing (B Bigombe, 2004). In the case of perceived high infant and child mortality rates, the fear of extinction encouraged high procreation with the hope that some of the births would survive to carry on the lineage. Interestingly, it is also believed that Rwanda's birth rate is on the increase because Rwandans generally believe it is their moral duty to replace the one million or so people that perished during the genocide in the year 1994 (B Bigombe, 2004). The high value traditionally placed on marriage ensured not only its universality but also its occurrence early in life with the consequence that child bearing started early and in most cases continued until late into the productivity span (B Bigombe, 2004). The institution of polygamy, which sometimes promotes competition for child bearing among cowives, also contributed to sustaining high fertility. Use of modern contraception was traditionally unacceptable as it violated the natural process of procreation. The traditional long period of breast-feeding and postpartum abstinence guaranteed adequate spacing between children (B Bigombe, 2004).

Report from the Demographic and Health Survey (DHS) reveals that there have been changes in some socio-cultural factors over time. Age at marriage appears to have increased, though minimally; it is still relatively low in rural settings and higher in urban settings. Use of modern

contraception has increased, especially use of condoms in the wake of HIV/AIDS, and improved education (especially of women) appears to have gradually eroded some of the traditional values placed on child bearing (B Bigombe, 2004).

China's fertility declines to below replacement-level took three decades to accomplish from the year 1970-1990, in the 1970s, with a "later (marriage), longer (birth interval), and fewer (births)" policy nationwide, China's fertility level was reduced by more than one-half in 10 years, from a total fertility rate (TFR) of 5.8 births per woman in 1970 to 2.7 in 1979 (RR Rindfuss, 2015). Intensification of the birth-control campaign at the end of the 1970s, with the introduction of the draconian one-child policy in 1980, brought fertility further down to 2.3 children per woman in 1980 (RR Rindfuss, 2015). Data continues to show very low Chinese birth rates. Census data for 2000 produced an estimated Total Fertility Rate of 1.22 children per woman (for the year November 1999 through October 2000 and National Bureau of Statistics of China (NBS) 2002 and 2003) (SP Morgan, 2009). Because of China's explicit and strictly enforced fertility policy, discussions of fertility in China have focused on policy as the primary determinant of birth rates

The family planning restrictions, in this light, are simply an obstacle to fertility, which when removed will increase the supply of children (S Basten, 2015). In 2012 the China Development Research Foundation—an influential think tank with close links to the National Government—recommended a 'three-step' policy transition: some provinces should implement a two-child policy straightaway, while a national two-child policy should be in force by 2015, and all limits on births removed by 2020 (S Basten, 2015). On October 29, 2015, the Chinese Communist party announced that "China will fully implement the policy of the "one couple, two children" (CPC Central Committee 2015). This means that China officially reversed its 35-years-old one-child policy and allowed some couples to have two children. After the announcement, the policy was extended to everyone (Z Wang, 2016).

Initially, in 1980, the one-child policy applied to all couples, but exceptions to that universal policy developed almost immediately. For instance, in 1982, couples in several categories—ethnic minorities, rural, or returning from overseas—were allowed to have two children if their first child was a girl or disabled (Z Wang, 2016). It was called the "one -and-a half" (Yitaiban) policy. Starting in 2000, couples in which both parents were only children could have two children. It was called the "double single" (Shuangdu) policy. In 2013, couples in which even one of the spouses

was an only child were allowed to have two children. It was called the “second child alone” (Qandu) policy (Z Wang, 2016).

The latest policy change will allow all couples to have two children, which is called “the universal two-child policy” (Quanmian fangkaiertai). This can enable us to achieve balanced development of the population in China. It is an important move towards demographic balance in terms of the long-term development of China. After serious examination on its likely effects. The Ministry of Health and the Family Planning committee argue that the policy is feasible

On 28 August 2018, a news story appeared in the Global Times a state newspaper belonging to the People’s Daily, the official newspaper of the Chinese Communist Party, reporting that the draft of the new Chinese civil code, which had been planned to be presented in the plenary session of the National People’s Congress in March 2020, was omitted any reference to family planning and, concretely, to the current policy that limited couples to not having more than two children. What are the reasons that led the Chinese government to such an unexpected and rapid change of mind regarding fertility control, which had been such a significant issue (Veiga, 2020). There is no doubt that, after certain fears regarding a possible significant rebound in fertility in China as a consequence of the shift from the One-child Policy to the Two-child Policy, the data gathered for the year 2018 and published by China’s National Bureau of Statistics on 21 January 2019, regarding the number of births, revealed a significant decline, from 17.9 million births in 2016 and 17.6 million in 2017, to 15.23 million in 2018. This decline once again fed strong fears regarding the current and future ageing of the Chinese population. (Veiga, 2020)

According to (OS Ewemooje, 2020) in his work (literature review), highlighted three (3) main ideas as important measures of childbearing intentions; namely, intended or ideal family size, general childbearing intentions, and child-timing intentions (Kuhnt, 2013; Spider, 2009).

Ideal or intended family size is generally parity-specific quantum plans spelling out the number of children one intends having over one’s reproductive life and is typically contingent on the number of children already born (MR Testa, 2017). The child-timing intentions are time-based plans confining the period in which one desires to have the first or subsequent child (MR Testa, 2017).

General childbearing intentions refer to one’s intention or desire to have a first or another child, irrespective of timing and quantum. (MR Testa, 2017). Studies examining childbearing intentions

have found that most women want to have children, the desire for children is not universal (Heywood, 2016; Matovu, 2017; Oyediran, 2005). Some women do not want children and so purposely and actively avoid having them; others plan to have children but fail to realize those intentions for one reason or another. Thus, concerning childbearing, women are not a homogenous group and their desires and decisions to have or not to have a child are shaped by several micro and macro factors (OS Ewemooje, 2020).

### **2.1.2 Fertility trends in South Africa from Demographic and Health Survey reports 1998, 2003 and 2016 (SADHS).**

South Africa has endorsed a decline in fertility, there has been a decline in fertility from 1998 from 2.9 to 2.1 children per woman in 2003 and to 2.6 children in 2016 (South Africa Demographic and Health Survey reports). According to the estimates of (TA Moultrie, 2003), the total fertility rate was around six children per woman in the 1960s but had dropped to between 3-4 by the 1990s. Fertility has further declined from 3-4 in the 1990s to 2.6 children in 2016 (DHS report 2016).

Report from DHS 1998 reveals that fertility in urban areas was 2.3 children per woman and substantially lower than in rural areas which was 3.9 children per woman, resulting in a national Total Fertility Rate of 2.6 children per woman. This lower fertility in the urban areas is apparently cut across all ages. Peak childbearing for urban women occurred between the ages of 20-34 years and peak childbearing for rural women occurred between the ages of 15-39 years. Rural women continue to bear children at later ages than urban women. The most interesting fertility transition taking place in South Africa at present is that of the African population. Besides the fact that Africans constitute the majority of the South African population, and therefore determine overall fertility levels, their fertility behaviour may also predict the path of future fertility trends in other African countries.

In 2003 fertility in the urban areas was 2.1 children per woman and the rural areas was 2.2 children per woman, resulting in a national Total Fertility Rate of 2.6 children per woman. The peak of childbearing for urban women occurred between the ages of 20-34 years, peak of childbearing for rural women occurred between the ages of 20-39 years fertility in urban areas of South Africa is now only marginally lower than in rural areas. Report on the previous SADHS 1998 indicated urban fertility levels of 2.3 children per woman, and rural fertility levels of 3.9 children per woman.



Data from the 2003 DHS suggest that urban fertility has fallen by 9% over the preceding five years while rural fertility has fallen by 56% over the same period.

In 2016 The total fertility rate (TFR) is 2.4 children per woman in urban areas and 3.1 children per woman in rural areas, resulting in a national TFR of 2.6 children per woman. Peak of childbearing occurred at the ages of 25-29 year among both urban and rural women. Data from the 2016 DHS reports that the Total Fertility Rate among women in rural areas dropped from 3.9 in 1998 to 3.1 in the year 2016. In urban areas, the Total Fertility Rate increased marginally from 2.3 in the year 1998 to 2.4 in the year 2016.

Fertility varies by residence and province. Women in urban areas have an average of 2.4 children, compared with 3.1 children among women in non-urban areas. Fertility ranges from a low level of 2.1 children per woman in Western Cape to a high of 3.1 children per woman in North West and Limpopo. In general, fertility decreases with both education and household wealth. Women with more than secondary school have an average of 2.2 children, while women who have completed only primary school have 3.5 children. Fertility declines with household wealth, from 3.1 children per woman in the poorest households to 2.1 children per woman in the wealthiest households.

### **2.1.3 Fertility trends in Kenya from Demographic and Health Survey reports 1989, 1993, 1998, 2003, 2008, and 2014.**

The total fertility rate (TFR) for Kenya in the year 1989 was 6.7 per woman, if she had children at the same rate as women are currently having at each age group. Fertility increases in the age group of 20-34 years, and starts to decline in the ages of 35-49 years. It is important to note that the decline in fertility is consistent with the increase in age.

Factors relating to fertility decline could be the recent extension of a comprehensive health care system, which makes it easy to promote population programs. The fall in the rate of infant mortality could also have contributed to the fertility decline. Several studies have shown that there is a close relationship between the infant mortality rate and the fertility rate (KDHS 1989). When the probability of child survival increases, couples need to have only that number of children which they actually desire, especially when childbearing involves both physical and mental strain and childrearing is expensive. By achieving major reductions in infant mortality in Kenya, a similar decline in fertility has been possible. Perhaps the largest single factor that has contributed to

fertility decline is education, especially education of women. Age at marriage increases with education, hence delaying the start of childbearing. Women in urban areas have a total fertility rate of approximately 5 live births, compared to about 7 for rural women.

The total fertility rate for the three years before the survey (representing early 1990 to early 1993) is 5.4 children per woman. The age pattern of fertility indicates that women in Kenya have children early in the childbearing period; by age 30, a Kenyan woman will have given birth to almost 60 percent of the children she will ever have (KDHS 1993). Fertility rates are higher in rural areas than in urban areas, a pattern that has persisted in various censuses and demographic surveys that have been carried out in the country (Kenya). The total fertility rate is estimated at 5.8 in rural areas and 3.4 in the urban areas. Female education apparently has a strong effect on fertility. Women with no education or only some primary schools give birth to more than 6 children on average in their lifetime, compared to 5 children for women who completed primary school and 4 children for women with some secondary school.

The survey results (KDHS 1998) demonstrate a continuation of the fertility transition in Kenya. At current fertility levels, a Kenyan woman will bear 4.7 children in her life (KDHS 1998). From the 1989 KDHS when the total fertility rate (TFR) was 6.7 children. A rural woman can expect to have 5.2 children, around two children more than an urban woman with 3.1 children (KDHS 1998). Peak childbearing occurs during ages 20-29 years, falling sharply after age 34. This pattern of higher rural fertility is evident at every age. Fertility differences by women's education level are even more remarkable; women with no education will bear an average of 5.8 children, compared to 3.5 children for women with secondary school education.

However, fertility seems to have started rising, albeit marginally, from a total fertility rate of 4.7 children per woman in the year 1998 to a total fertility rate of 4.9 children per woman during the period from mid-2000 to mid-2003 (B Auvert, 2001). This upturn in birth rates has especially affected age groups 25-39. Fertility is considerably higher in the rural areas (5.4 children per woman) than urban areas (3.3 children per woman), a pattern that is evident at every age and that widens with age. Overall, peak fertility occurs at age 20-24. In the rural areas, falling sharply after age 39. In the urban areas, however, fertility peaks at age 25-29 year and starts to decline after age 34. The persistence of a disparity in fertility between urban and rural women is due to favorable

factors most probably associated with urbanization (e.g., better education, higher status of women, better access to family planning information and services and later marriage) (KDHS, 2003).

A TFR of 4.6 children per woman was reported for the 2008 Kenya Demographic and Health Survey, compared with a total fertility rate of 4.9 children reported for the year 2003 KDHS. As expected, rural areas (5.2 children per woman) recorded higher fertility than urban areas (2.9 children per woman) This pattern is reflected by every age group, and the difference increases with the age of the women, Nationally and in rural areas, the peak fertility occurs early, at age 20-24, while in urban areas, fertility has a broader peak, being almost equally high for the 20-24 and 25-29 age cohorts. Fertility rates, however, fall dramatically after age 39 in both rural and urban areas. The disparities in fertility among rural and urban women could be attributed to the significant role played by education in population growth. When literacy of women improves, fertility rates tend to decrease. Similarly, fertility rates tend to be lower where women have access to decent jobs, good health care, and family planning resources—which are more available in urban areas than in rural ones.

The TFR is 3.9 births per woman as reported for the 2014 KDHS. This means that a Kenyan woman would bear about four children in her lifetime if fertility were to remain constant at current levels. This represents a decrease since the 2008-09 KDHS, when the TFR was 4.6 births per woman. The TFR is higher among rural women (4.5 children per woman) than urban women (3.1 children per woman), and this trend is evident across all age groups. The largest absolute difference is seen among women age 20- 24 in the rural areas. Rural-urban differences appear to be narrowing over time. In the 2008-09 KDHS, the TFR was 5.2 in rural areas and 2.9 in urban areas.

Kenya is endowed with a wealth of demographic data. Accordingly, changes in fertility levels over time can be tracked by examining fertility estimates from various surveys and censuses. Kenya, with 6 successful demographic and health surveys, studies show that the speed of fertility decline has been steady: -2.64% in urban areas, and -1.62 in rural areas (B Bigombe, 2004). Overall, there are moderate to large declines in fertility in Kenya, Rwanda, Zimbabwe, Botswana, South Africa, and Cote d'Ivoire, with smaller declines in Malawi, Tanzania, Zambia, Cameroon, Central African Republic, Burkina Faso, Gambia, Ghana, Senegal, and Sierra Leone (B Bigombe, 2004).

With urbanization levels close to 50% in most African countries, cities have become the source of new lifestyles and means of access to health and contraceptive services. Despite the strong links

between urbanization and the prevalence of contraceptives and reductions in fertility, surveys conducted in Kenya suggest that precipitous declines have affected all socioeconomic and demographic groups (B Bigombe, 2004). Thus, fertility has fallen in both rural and urban areas, within all age groups, and across all provinces, irrespective of socioeconomic background (Ankrah, 1993). Research conducted among the Kikuyu of Central Province, Kenya, reveal significant urban-rural variations in the value of children despite aggregate fertility declines. Peri-urban areas characterized by socioeconomic changes, notably the decline in traditional agricultural systems of production and the increasing ownership of land by women, as well as education and access to contraceptives have reduced the demand for large families (B Bigombe, 2004). Further challenging the economic value of children is the economic deterioration that has increased the costs of having many children. In contrast, high fertility rates persist in the more rural communities where social institutions and cultural practices continue to dominate and where there are fewer educational opportunities and limited use of contraceptives (P Antoine, 1991).

Equally important to the broader fertility declines in Africa is the phenomenon of delayed marriage and childbearing. Demographers have established a link between delayed changes in marriage and Africa's incipient fertility transition. These trends have been captured from comparative studies of childbearing women between the ages of 20-24 and 45-49 that suggest that while most African women still marry young, the proportion of women marrying before the age of 20 has declined rapidly in most countries (B Bigombe, 2004). In East Africa, eight of the nine countries surveyed showed a substantial shift toward later marriages. In West Africa, two countries -Senegal and Guinea- have shown marked change between older and younger women. Other studies have reinforced this perspective, revealing the emergence of a recent trend toward later age at marriage and age at first birth in Ghana, Kenya, Nigeria, Togo, and Uganda (B Bigombe, 2004). Although the changes in timing of marriages is attributable largely due to the positive relationship between urbanization and educational attainment, these changes are also noticeable among rural women and women with no education (B Bigombe, 2004).

## **2.1 Theoretical literature**

It is important that we understand what causes fluctuations or movements in fertility, to produce accurate predictions for the future. The changes that may occur in fertility either an increase, decrease or a stall in fertility varies across countries, rural areas and urban areas. Some countries

are below the Replacement-level fertility (2.1 per woman), while some other countries are above the Replacement-level fertility. Researchers have been studying fertility rates and have produced numerous theories and projections. Fertility theories have the same core component – they all describe changes in the level of fertility. The economic theories presented below respond to numerous questions referring to changes in the level of births or fertility. The main field for differentiation among them is the source of changes.

### **2.1.1 Theories of fertility**

The fertility theories below are related to the research questions mentioned in the previous chapter one. The theories will further elaborate the research questions.

- ❖ There are two versions of the Easterlin hypothesis. One version assumes that fertility is a result of relative income, the second deals with a dynamic process where the past level of fertility is negatively correlated with the current fertility level. (Bonneuil, 1990); (B Waldorf, 2002).

The Easterlin hypothesis, also referred to as the “relative income hypothesis” and “relative cohort size hypothesis,” connects fertility to the economic status of the younger generation relative to that of the parental generation (B Waldorf, 2002). The fertility interpretation of Richard Easterlin (Easterlin, 1966; 1976) is based on changing material aspirations and desired consumption. Material aspirations, formed during adolescent years on the basis of parental income, will be high if parent’s incomes are high, and vice versa. If income is low relative to material aspirations, then fertility will be low, and vice versa (B Waldorf, 2002). The demographic implications of the Easterlin hypothesis suggest a link with relative birth cohort sizes, such that large cohorts relative to the parental cohorts will lead to a low relative income and thus decreased fertility, whereas cohorts that are small relative to the size of the parental cohorts enjoy favorable labor market conditions and thus will display a higher fertility (B Waldorf, 2002).

The Easterlin effect is restrained among European countries by social and institutional features affecting the influence of relative cohort size on fertility. High rate of female labor force is the most important feature, which reduces the impact of relative cohort size on fertility (Suseł, 2005).

(B Waldorf, 2002) tested the Easterlin hypothesis with respect to regional differences in Italy. Their variables comprised the fertility norms and values across the space and movements between labor markets. The study provides three findings. First, space-time is a very important and significant variable in regional analysis. Second, fertility within one region has an impact on the neighboring regions and thus cannot be ignored in any fertility study. Third, the effects of relative cohort size on the level of fertility vary between regions and time periods. Easterlin emphasized that:

- Income patterns of young people differed from those at the aggregate level: these discrepancies caused the observed changes in relative income, which in turn caused the observed changes in fertility rates.
  - The fertility decline started first with 15-19 years old in 1956-1958, with the other young age groups (20-24 and 25-29) not showing any tendency to decline until the period 1959-1961: a pattern consistent with the idea of relative cohort size effects.
- ❖ Macunovich (1996) formulated another theory for shifts in fertility rates. This model measures the interaction between relative income and the female wage. The theory of Easterlin assumes that the female plays a passive role; Macunovich added the factor of females' wages to her model. During the 1960's to 1980's women began to achieve their own desired standard of living with their own resources, rather than with the male's earnings. They entered the labor force and started obtaining higher levels of education. With this trend, marriage is deferred and fertility rates have decreased. Therefore, the increase in female participation in the labor force must be included when analyzing fertility rates.

Macunovich measured the relation between relative income and the female wage. She believes that an increase in the male's relative income will cause a rise in fertility while an increase in female wages will produce downward pressure on fertility. That is, a rising female wage will have a negative effect on fertility and vice versa.

It is important to notice that this model has a one-year lag between the relative income and fertility. This lag occurs because couples do not immediately adjust their fertility levels when there is a change in their financial situation. She concludes that the common

movements in relative earnings, marriage, female labor force participation and fertility provide strong evidence supporting the relative cohort size theory.

- ❖ Another theory that explains the reasons for changes in fertility rates is the Butz and Ward model. It states that there are three factors that affect the timing of fertility decisions: the proportion of women in the labor force, women's earnings and men's earnings. While the demand for children increases with an increase in the husband's wages, the wife's wages will have the opposite effect. Increases in women's wages serve to lower fertility.

In the period of time following the baby boom, the labor force participation rate of women and their earnings increased significantly. In fact, the most common status for American mothers in the eighties was to be both married and employed outside the home. The increasing number of females participating in the labor force and rising wages, contributed to a decline in fertility.

The Butz and Ward model implies that times of economic prosperity are the most expensive times for employed women to have children. Fertility rates move in the opposite direction to those of the business cycle. During recessions, family income is lower and therefore couples decide not to have children because of the high costs associated with childbearing. Therefore, as more women are employed, times of economic prosperity do not imply an increase in fertility. Instead, they will tend to delay childbirth and fertility rates can actually decrease.

The variables that affect the female labor force participation rate also affect female's decisions to have children. This model fits the fertility rate of younger age groups (20- 34 years) but is less accurate for the group aged 35-39 years. These results are mainly because young women have more reproductive years to adjust their family size. However, Butz and Ward concluded that the overall result for the entire population is a negative relationship between female employment and fertility.

- ❖ Ermisch's theory (1983) explains that the main cause of fertility movements is the increasing demand for female workers. The factors which can permanently influence a female's decision to work include: her husband's expected future earnings, her earning potential and changes in preferences in the household. Usually, female labor force

participation is interrupted for short intervals during which they bear children. Ermisch's theory distinguished two groups of women: "workers" and "non-workers".

The opportunity cost of having children is high. A child would demand more of the couples' time and lower the family's present income due to the loss of the wife's earnings. When the number of females in the labor force increases, fertility tends to decrease during times of economic growth.

Ermisch explains in his theory that as more females choose to work most of their lives, the average age at first birth increases and the intervals between births decreases. Women employed in professional positions tend to wait long periods between marriage and the birth of their first child. The inter-generational influences on females' labor force participation. The daughters of working mothers are more likely to work during their childbearing years. Thus, there is an indirect effect on a woman's fertility from her mother being employed.

Ermisch believes that changing economic conditions will cause couples to adjust their desired family size. During economic growth the proportion of two earner families with the minimum desired family size would increase. Simultaneously, economic growth has the effect of increasing the desired family size of single earner families.

- ❖ Romaniuk (1978) recognizes that Canada is presently in its second low fertility cycle. The first cycle occurred between the two World Wars and the second one began at the beginning of the 1960s and continues through to today. However, these two cycles differ significantly in magnitude. The difference in birth rates among the regions has narrowed compared to their rates prior to World War II. Additionally, there has been a decrease in the effects of factors such as ethnicity, language, and religion. However, there still exist differences due to labor force participation and education. Overall, fertility rates at the ends of childbearing years, i.e., ages 20-24 (lower end) and 40-44 (upper end), have decreased and those at ages 30-34 have shown a slight increase. This is the result of women waiting longer to have their first child and giving birth at longer time intervals. Romaniuk conducted surveys in the United States and Quebec, which indicate that there is a significant decrease in the number of children that young couples expect to have. There are several possible reasons for this decline, such as changes in women's roles, and changes in the status of children.



There appears to be a definite increase in the number of young couples intentionally choosing childlessness. This trend is currently assisted by increased use of contraception, family planning and social equality in sex roles. A further factor exerting a downward pressure on fertility is the decrease in marriages and the rise in divorce rates. Romaniuk discovered that there is a significant reduction in the marriage rate, particularly prior to age 35. The divorce rate of 1981 was six times that of 1960-1962. These effects outweigh those of increased out-of-wedlock births.

- ❖ Keyfitz (1975) a professor of Demography, also studied the effects of factors such as abortions and contraception on the level of births observed. He proposes a model which implies that an abortion does not prevent a birth in the population as basic logical thinking suggests. Instead, it could actually have the effect of reducing the time until the female's next pregnancy. Keyfitz research indicates that females using contraception tend to have all their children within a few years during their fecundity period. As the level of efficiency of the contraceptive increases, the more concentrated the childbirth period becomes. Therefore, instead of the mother being out of the work force on several occasions for the rearing of each child, she instead leaves on one occasion. Keyfitz believes that by encouraging couples to have their children in a clump instead of spread over 25 years, birth control could actually be increasing the rate of growth of the population. His research discovered that older women seem to have been attracted to birth control before younger women. This results in a sharper decrease in childbirths in the older reproductive years than in the younger.
- ❖ Tsui (1979; 1983), Bogue (1979) and Hogan (1983) believe that the decrease in the fertility rates of the 1970s may be due to changes in fertility within marriages (nuptial fertility); changes in extramarital fertility; and changes in the number of marriages. They suggest that variables such as the couple's demographics (e.g., age of each partner, marital status, duration of marriage, number of living children); each partner's background (i.e., race, ethnicity, language, urban-rural origin); the female's education level; and each person's occupation should be included and controlled in any fertility analysis. Movements in fertility are strongly influenced by the "childbearing attitude climate" of the couple. This attitude determines the desired family size, the sex preference for children, feelings towards

use of contraception and results in questions such as “Was the last child born wanted or unwanted?”

Desired family size is self-explanatory. Sex preference for children refers to a couple’s need to have a certain number of sons (daughters). Therefore, their child births are less likely to be determined by their desired family size and more by the total number of sons (daughters), or combination thereof, which they aspire to have. The couple’s attitude towards the use of contraception serves to separate the population into two distinguishable groups governed by their positive attitude (known as “pro-birth planning”) or negative attitude (known as “pronatalist”) towards contraception. Therefore, the overall fertility movements seen in the population are affected by the proportion of people in each group. Finally, the issue of unwanted versus wanted last pregnancy determines whether the couple’s last encounter was one that left a feeling of pleasure or one of disappointment and other negative emotions. These feelings in turn affect their attitude towards possible future pregnancies. Tsui, Bogue and Hogan suggest that there is an inverse relationship between the couple’s level of contraceptive knowledge and their desired family size. Their research indicates that couples with small desired family sizes tend to be very knowledgeable on fertility regulating practices. This in turn allows them to attain and not surpass their family size aspirations.

## **2.2 Empirical literature**

South Africa is a multiethnic society with diversified cultural behavior. The distinctive cultures of the major racial groups have meant not only varying attitudes toward fertility control but also marked contrasts in family structures providing individuals with quite different rewards and penalties for the same levels of fertility (Caldwell, 1993). White fertility transition was a standard Western-type transition, occurring in a socioeconomic context very similar to that of Europe and of English-speaking countries of overseas European settlement and very different from the situation among South Africa's other racial groups, and owing practically nothing to the national family planning program. The black fertility decline began perhaps two-thirds of a century later, with a 1990 fertility level similar to that of the total white population at the beginning of the twentieth century and of the English-speaking white population of about 100 years ago (Caldwell, 1993). This relatively high level of fertility is partly a reflection of the social and economic

circumstances of the black population, and the onset of fertility decline has occurred at much the same levels of child survival and adult education as in the few other sub-Saharan populations to experience fertility decline (Caldwell, 1993).

Until the early 1940s, Indian, colored, and black fertility was high and constant with TFRs of 6-7 children per woman, the level still found in most sub-Saharan African countries. Indian fertility fell sharply from about 1940 and, with a TFR of 2.5 children per woman, is now near replacement level. Colored fertility declined even more steeply, but only from 1960 on, and is now around 2.9 per woman. Black fertility also began to fall slowly from about 1960, faster in the 1970s, and faster still in the 1980s, perhaps attaining a TFR of 4.6 by the late 1980s (Mostert, 1990).

J. Caldwell, I. Orubuloye, and P. Caldwell (1992) argued that the black African thresholds were different from those found elsewhere, and indeed it is possible that all racial communities in South Africa had different thresholds. If the African child survival threshold is best expressed as 89 percent of births surviving to five years of age, then we should note that this level was reached by the Indian community just as fertility began to fall in the early 1940s, by the white community after World War I (evidence perhaps that the onset of their transition was less sensitive to child mortality levels), and by the black and colored communities as late as the mid-1970s (possible evidence of the impact of the family planning program in causing the onset of fertility decline earlier than that date). Once important facets, fertility behavior have changed and society becomes aware that many of its members have adopted new lifestyles which has, reinforce the changes. White fertility declined in the first four decades of the twentieth century and in the second half of the 1970s when white fertility fell faster than anywhere in the West, probably driven by conformity to fertility patterns found elsewhere in the developed world but possibly also by the growing government driven population debate in South Africa (Caldwell, 1993). The steep colored fertility declined after 1960 shows that large families were no longer an asset, but changes in the rate of decline seem to reflect the various stages in making free contraceptive services more easily available. The black fertility decline rest on the problems faced by many women especially urban women with regard to pregnancy and the rearing of children, but the timing of that decline indicates that the family planning program played a significant role. The simplest fertility transition in South Africa, seemingly unidirectional at an unchanging rate, was the Indian one; this seems to be par excellence an illustration of the changing demand for children. Indian fertility progressively

converged with that of whites, but in the 1980s it leveled out with completed family size closer to three children than the whites' two, perhaps evidence that Indian families must still have a son (Caldwell, 1993).

Kenya has one of the oldest family planning programs in sub-Saharan Africa which started in 1967, the 1977-1978 Kenya Fertility Survey (KFS) showed that the country had one of the highest fertility rates on the continent (Njogu, 1991). Evidence from the Kenya Demographic and Health Surveys (KDHS) reveals that the total fertility rate (TFR) has been declining. There are many possible explanations for fertility declines (e.g., delayed marriage, increases in breastfeeding, contraceptives use etc.), most researchers agree that increased use of modern contraception is largely responsible for declines observed in many developing countries (B Berelson, 1980); (Bongaarts, 1986); (J DaVanzo, 1982); (RJ Lapham, 1985). During the late 1970s Kenya embarked on an intensive effort to increase contraceptive use (NCPD 1984). In 1982 these efforts culminated in the formation of the National Council for Population and Development (NCPD), whose responsibilities are to monitor and coordinate population activities in the country.

Contraceptive use seems to have played a role in the strength of the relationship between mortality and fertility in Kenya. Indeed, child mortality was one of the main factors used to explain the high fertility rate in Kenya during the late 1970s, and child survival programs were estimated to be more cost effective than family planning programs in terms of lowering fertility (Cochrane, 1984). (Njogu, 1991) identified in the late 1970s a strong and negative effect on contraceptive use among women who had experienced child loss. Ten years later the overall level of child mortality had declined and the effect of contraceptive use had lessened. Previous work has shown, that education and type of residence (rural/urban) are important determinants of contraceptive use (Njogu, 1991). In periods of change, shifts in proportions of women in these subgroups are bound to occur. If the subgroups have different propensities to use contraception, overall contraceptive use rates could change (Njogu, 1991).

(Jensen, 1997) study uses data from two areas in Kenya (the Muslim Kwale in Coast Province and the Christian Bungoma in Western Province) and finds a strong influence of child mortality on fertility and contraceptive use, suggestive of hoarding behavior. In both areas child mortality is associated with high fertility and constitutes the strongest barrier toward using modern contraceptives.

An analysis by Sinding 1991 on the Kenyan fertility decline identifies some of the factors: (1) rapid social change, especially increased formal education of women, (2) greater governmental legitimization of family planning, (3) greater bureaucratic efficiency, especially in organizing the distribution of contraceptives, and (4) the continuing global growth in the acceptance of family planning programs.

## **IMPACT OF HIV/AIDS ON FERTILITY**

Studies in sub-Saharan Africa, concluded that HIV-infected women have between 25 and 40% lower fertility than HIV-uninfected women, except for the youngest age group in whom selection for early sexual activity results in higher fertility for the HIV infected (ML. Garenne, 2007). The estimate that lower fertility among HIV-infected women may cause an attributable decline in total fertility of 0.4% for each percentage increase in HIV prevalence in the general female population (ML. Garenne, 2007).

Lower fertility among HIV-infected women is largely caused by HIV-associated illness or mortality in the male partner, and a reduced ability to conceive or a higher probability of fetal loss (as a result of previous or concomitant sexually transmitted diseases) (A Ross, 1999); (RH Gray, 1998). Co-infection with other sexually transmitted diseases (STD) has been implicated as a possible explanation for the reduced fertility associated with HIV infection (A Ross, 1999). Direct biological effects of HIV infection may play a role in the reduced fertility among HIV-infected women. These may include severe weight loss in advanced disease, leading to amenorrhea (R Widy-Wirski, 1988); higher rates of fetal wastage, including miscarriages, still births and accelerated disease progression associated with pregnancy (P Brocklehurst, 1998).

The reduced fertility in HIV-infected women is only one of the mechanisms through which fertility may be affected in societies with a high prevalence of HIV. HIV may also exert a downward pressure on fertility at the population level by bringing about behavior change in the population as a whole. When awareness of the risk of HIV is high, fertility may be reduced by increasing the age of sexual debut, decreasing re-marriage after widowhood or separation, and more generally, by increasing the use of contraception, particularly barrier methods (N Terceira, 2003). Various concerns have also been raised that the HIV epidemic could lead to higher fertility among HIV-uninfected women as an insurance as a result of increased child mortality associated with HIV/AIDS, if those using effective hormonal contraceptive methods switch to condoms, or if

women who are concerned that long abstinence after childbirth increases the likelihood of their husbands starting an extramarital relationship decide to resume sexual relationships earlier (Setel, 1995). Women who stop breastfeeding because of the early HIV-associated death of their child or because of the risks associated with HIV transmission would resume ovulation much sooner, again changing the expected fertility patterns (Stecklov, 1999).

## **IMPACT OF INFANT MORTALITY ON FERTILITY**

The death of child is always a traumatizing moment for mothers or couples. And some cases after the death of an infant, women tend to either fall pregnant almost immediately or wait for a long period of time. In whatever case, infant mortality can influence either increase fertility or decrease fertility.

High child mortality may induce high fertility (Preston, 1978). This may happen as a result of several mechanisms. The death of the child initiating the birth interval may trigger the rapid closure of the interval either through a physiological replacement mechanism whereby the death of the child leads to termination of breastfeeding and the consequent shortening of postpartum amenorrhea; through a volitional replacement mechanism (that is, the responsiveness of pregnancy decisions to the occurrence of the death of infants who either never breastfed or stopped breastfeeding before death); or through a generalized survival uncertainty (that is, as the probability of survival falls, there is also a tendency to have children earlier and thus closely spaced) (Defo, 1998). Women or couple's experiences may well lead them to revise and adjust their desired number of children and possibly diminish or increase their propensity to replace deceased children. Because we do not explicitly model breastfeeding and contraceptive behavior, we cannot empirically distinguish these two causal mechanisms directly for the short-term replacement effects (Defo, 1998). Moreover, it has been shown that, in many parts of sub-Saharan Africa where prolonged breastfeeding is prescribed and sexual intercourse during lactation is forbidden, the physiological effect is culturally built into behavior patterns (Ware, 1977).

Several studies have shown that there is a close relationship between the infant mortality rate and the fertility rate. When the probability of child survival increases, couples need to have only that number of children which they actually desire, especially when childbearing involves both physical and mental strain and childrearing is expensive.

An instance of possible increase in fertility rates as a result of increased mortality is the case of the Rwanda's. It is also believed that Rwanda's birth rate is on the increase because Rwandans generally believe it is their moral duty to replace the one million or so people that perished during the genocide in the year 1994 (B Bigombe, 2004).

#### **2.2.4 PROXIMATE DETERMINANTS OF FERTILITY**

Proximate determinants of fertility are the biological factors, socio economic factor and behavioral factors, that directly or indirectly influence fertility over the woman's reproductive plan.

##### **❖ Economic downturns**

Economic downturns tend to more negatively affect first births among younger adults who have the opportunity to postpone childbearing until economic and labor-market security has been restored (Andersson, 2000)

##### **❖ Economic recessions**

Economic recession tends to have different impacts on the fertility of highly and low-educated women, but these differences may vary across countries (Sobotka, 2011; Neels, 2013). The most common rationale for the decline of fertility during periods of economic turbulence comes from economics and concerns the financial costs of children and opportunity costs for women and families (Becker, 1960; Ranjan, 1999). Economic theories presume that childbearing entails immediate expenses and long-term financial and time commitments. Therefore, when financial and labor-market insecurities rise, incomes drop, and career prospects deteriorate, individuals tend to postpone major irreversible commitments such as having a child. (C. L. Comolli, 2021)

##### **❖ Mortality rates**

Mortality rates have a large impact on fertility reductions/ fertility increase and can account for a major part of the fertility change characterizing fertility behaviour. According to (Murtin, 2013) when child mortality is high, parents have more children to hold net reproduction rate (NRR) constant, Net Reproduction Rate (NRR) being equal to the product of fertility by child survival probability.

## ❖ Contraception

Large fertility declines in the developing world occurred due to a major change in reproductive behaviour of couples in the childbearing ages (Bongaarts, 1984). More specifically, contraceptive practice has been considered as the interventions of choice for slowing population growth. Contraceptive knowledge significantly reduces fertility. Besides, mass media exposure and social networks play important roles in obtaining knowledge of modern contraceptive techniques. Women, who regularly watch TV, listen to the radio, or read newspapers and magazines are more likely to be exposed to contraceptive-related information and hence have more knowledge of contraceptives. Similarly, women who participate in women's organizations are more likely to obtain contraceptive information through word-of-mouth communication

## ❖ Age

At the individual level, age have been identified as major determinant of fertility intentions. Fertility is a function of age because biologically the childbearing period continuously decreases (Z Spéder, 2009). Since a woman's ability to conceive and bear children naturally declines and completely stops beyond a certain age, this can safely be assumed to influence her childbearing aspirations such that desires to have children will be expressed relatively early on in life (Heywood, 2016; Spider, 2009). Consequently, younger age has been found to significantly shape women's childbearing aspirations in the literature. Some studies have found that younger women, particularly those aged below 30 years, are more likely to express both the desire for and intention to have children (Bandehelehi, 2019; Ciritel, 2019; Heywood, 2016; Meggiolaro 2008). However, whilst many of these women may express childbearing aspirations at younger ages, not all of them will act upon it immediately, but may rather delay motherhood to a later period (OS Ewemooje, 2020). Conversely, older age has a significant effect on the desire not to have children (Matovu, 2017; Oyediran, 2005; Philipov, 2005). For instance, (D Philipov, 2005) analyses of fertility intentions in Bulgaria and Hungary—measured as whether to have or not to have a first or a second child and if yes, whether to have this child within the next 2 years or later—found that in both countries older women revealed a lower desire to ever have a first child as compared to younger women. However, when the



timing is considered, older women who intend to ever have a first or second child were more likely to want it within the next 2 years as compared with younger women. Perhaps generally older women may desire to limit childbearing because they have already achieved their intended family size, and therefore have no need or desire for additional children. It is also possible that the decrease in their fecundity may make them less interested in wanting children for fear of failing to realise childbearing intentions (OS Ewemooje, 2020).

### ❖ **Relationship Status**

In most societies, a partnership (marriage or cohabitation) is presumed to be both a prerequisite to and a normative context for childbearing and, by extension, to the formation of childbearing motivations or intentions (Palamuleni, 2007; Roser, 2017; Spider, 2009). Therefore, the existence or non-existence of a partnership has strong bearings on the formation of fertility intentions (D Philipov, 2005). Consequently, it is anticipated that women in partnerships, either married or cohabiting, will more likely have childbearing aspirations compared to those who are single (AK Kuhnt, 2013).

It is estimated that in the United Kingdom, 40% of marriages will end in divorce (A Belanger, 2001). Another feature of the higher divorce rates is remarriage which is higher among men than women. Fertility is affected by the increase in divorce and separation, since time spent between marriages is usually time lost for reproduction for most women (C Norville, 2003). Even though, in both Canada and the U.S., an increase can be observed in the non-marital fertility rate, the majority of births still take place within marriages. While the fertility rates of common-law couples are increasing over time, the fertility rates of married women are nevertheless much higher than those of women in common-law unions. Compared to Canadian women, U.S. women tend to marry in greater proportions and to do so earlier in life. As stated, voluntary childlessness is increasing. Some couples simply do not want children or at least want fewer than in the past. The effect of childlessness and the change in families' inclination to have only one child has contributed to the changes in overall fertility rates (C Norville, 2003).

### ❖ **Marriage, Cohabitation and Divorce**

(Romaniuk, 1978), explains in his theory that there appears to be an increase in the number of young couples that are deliberately choosing childlessness. This trend is supported by an increasing use of contraception, family planning and social equality in sex roles. Another factor that makes fertility rates fall is the decrease in marriages and the rise in divorce rates. Voluntary childlessness is increasing. Some couples simply do not want children or at least want fewer than in the past. The effect of childlessness and the change in families' inclination to have only one child has contributed to the changes in overall fertility rates (C Norville, 2003).

### ❖ **Parity**

Many studies have found a negative relationship between an increased number of children born and women's fertility intentions. Higher childbearing intentions are common among childless women and women who have just one child (Bandehelehi, 2019; Testa, 2017). Correspondingly, women with two or more children may have a lower likelihood of intending to have more children than those with no child or one child (Matovu, 2017; Matsuo, 2016).

### ❖ **Women's educational attainment,**

Women's educational attainment, play significant roles in the determination of women's fertility, for example, it has been found that women's education and increased employment opportunities have a negative effect on children ever born (Roser, 2017). Although women of higher socioeconomic status do not necessarily intend to have fewer children than their less educated and unemployed counterparts, they eventually end up having fewer children (MR Testa, 2017). There are strong correlations between education, employment and income levels, it can be assumed that their effects on women's childbearing intentions will be similar. In a meta-analysis of research published between 1990 and 2011 using 86 studies covering 13 European countries, (MR Testa, 2017) found that both first and second birth intentions positively correlated with women's educational attainment generally. Additionally, this

positive education–intention relationship was driven mainly by women who have just one child (MR Testa, 2017).

### ❖ **Labour Force Participation**

Education and employment are related, it is expected that employment will have the same effect on women’s reproductive decisions as education does (OS Ewemooje, 2020). This is because education increases women’s ability to participate in economic activities. Thus, the increasing participation of women in wage labour should give them more reason to want no children or fewer children (OS Ewemooje, 2020). For instance, (D Philipov, 2005) analyses of fertility intentions in Bulgaria and Hungary found that in both countries, women who declared that work is more important than children were more likely to intend to remain childless. In a study of the impact of job instability on the fertility intentions of young European adults, (Karabchuk, 2020) found that job instability, measured as being in temporary employment, informal work, or unemployed, decreased fertility intentions, measured as plans to have a child in the next 3 years.

The Macunovich model (1996) measured the interaction between relative income and the female wage: an increase in the male’s relative income will cause a rise in fertility whereas an increase in female wages will produce downward pressure on fertility. During the 1960’s to 1980’s women began to achieve their own desired standard of living with their own resources, rather than with the male’s earnings. They entered the labor force and started obtaining higher levels of education. With this trend, marriage is deferred and fertility rates have decreased. Thus, the increasing participation of women in wage labour should give them more reason to want no children or fewer children (OS Ewemooje, 2020).

### ❖ **Wealth**

Economic security or insecurity has been found to influence the reproductive plans of women (Fahlen, 2015; Fiori, 2013). In a classical economic sense, the choice to have or not to have a child at all is a question of cost–benefit analysis. This perspective presupposes that childbearing accrue both direct and indirect costs—including the costs for childcare, schooling, and the opportunity cost in time that is needed for pregnancy—to parents (J Wei, 2018). It gives rise to an expectation that women’s increasing financial security (i.e., higher household wealth or personal wealth) is associated with higher childbearing intentions (Bandehehlahi, 2019; Philipov, 2005). It has been argued that more wealth makes more varied lifestyles possible, which might make women want fewer or no children (Roser, 2017). Contrary to this established relationship between wealth and childbearing intentions, (AA Ciritel, 2019) did not find wealth to be a deciding factor for planning a child among Romanians.

### **Summary of the literature reviewed**

From the above reviewed literature, it is apparent that lots of work has been done globally around fertility, contraceptives, teenage pregnancies, unwanted pregnancies etc., The investigation and argument show that fertility transition has taken place in Kenya and South Africa and other developed countries for example: Since 2010, the TFR has been declining in all Nordic countries, hitting the historically low levels of 1.35 children per woman in Finland in year 2019, 1.53 in Norway in year 2019, and 1.71 in Iceland in year 2017 (Nordic Statistical Central Bureaus 2018, 2019 and 2020), evidence from SADHS and KDHS reveals that there have been changes in some socio-cultural factors over time. Age at marriage appears to have increased; it is still relatively low in rural settings and higher in urban settings. Use of modern contraception has increased, especially use of condoms in the wake of HIV/AIDS, and improved education (especially of women) appears to have gradually eroded some of the traditional values placed on child bearing (B Bigombe, 2004).

Similarly, studies done by (Caldwell, 1993), (Njogu, 1991), (Mostert, 1990), (B Berelson, 1980), (Bongaarts, 1986), (J DaVanzo, 1982), (RJ Lapham, 1985), (Cochrane, 1984), (Jensen, 1997) and several others present great empirical review which brace the fact that proximate determinants influence fertility in women. Childbearing in women is not a homogenous journey, it differs universally.

However, there are several gaps identified from existing literature. Examples are the impact of modernization (place of residence) which has a significant influence on reducing fertility in women,

Women who are enlightened, knowledgeable and economically active in the urban areas have fewer kids compared to women in the rural areas the side effect of family planning and contraceptives on women with negative experience or unpleasant feedback.

Until recently access to contraceptives was limited and it was only meant for certain women and certain places. Which trigger high fertility among women in the Sub-Saharan African countries.

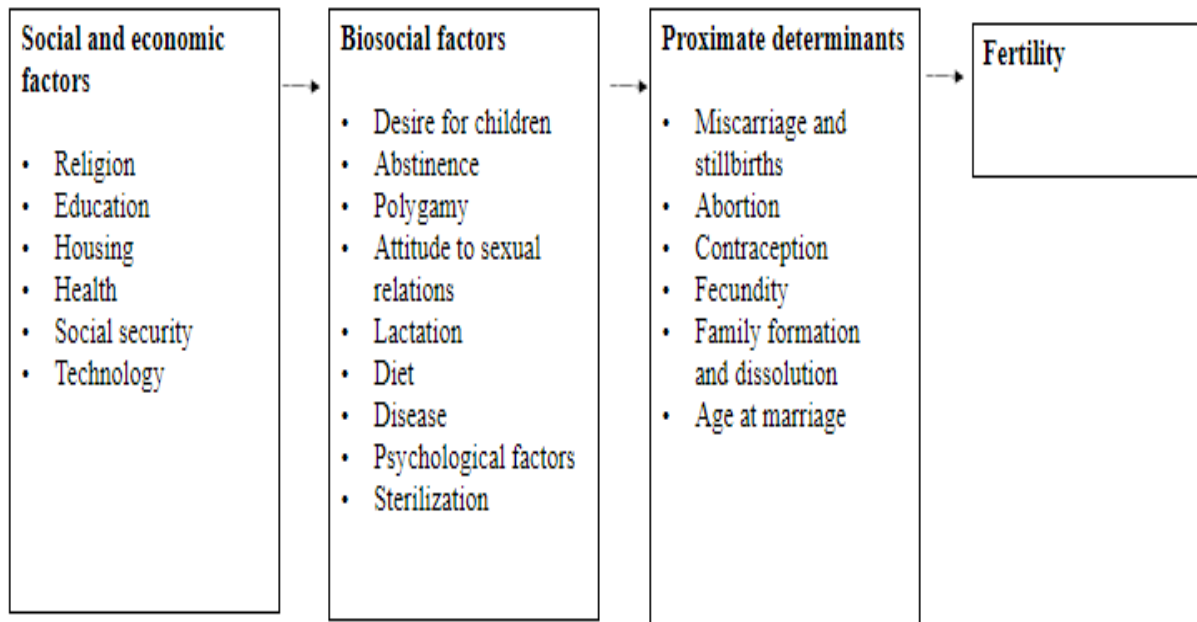
In the past women had no or less knowledge of the use of condoms, contraceptives, sterilization etc. the only possible practice then was probably post-partum sexual abstinence which gave room for child spacing (next birth) and also lengthen the breast feeding period and herbal mixtures.

### **2.3 Theoretical framework**

Fertility is influenced by both direct factors and indirect determinants. Socio-economic/cultural systems are factors such as: education, rural-urban residence (housing), religion, technology, health and social security. Biosocial factors include: desire for more children, polygamy, abstinence, attitude to sexual relations, lactations, Diet, disease, psychological factors and sterilization. Proximate determinants: miscarriage and stillbirths, induced abortion, contraception, fecundity, age at marriage (proportion of women in the total population who marry,), family formation and dissolution. These proximate determinants have direct impact on fertility, and consist of a set of biological and behavioral factors through which social, economic and cultural conditions can affect fertility (M Palamuleni, 2007).

Figure 2.1 below shows there is a relationship between the dependent and independent study variables. Fertility rates are the dependent variables while the behavioral social and economic factors, biological or behavioral factors and the proximate determinants of fertility are the independent variables.

**Figure 2.1:** Linkage between fertility and the socio-economic and cultural system through biosocial and proximate determinants.



**Source:** Fertility and childbearing in South Africa (M Palamuleni, 2007). Introduced by Davis and Blake (1956), modified by Bongaarts (1978, 1985).

## 2.4 Chapter Summary

The level of fertility is affected by many determinants. The major source of changes could be social, economic, cultural or geographical factors, which influence the level of births in a given society.

There exist many factors that affect the decision to have children or not. These factors include: the increased cost of raising a child or the change in the attitude of women towards work. Linked to these are technological changes that have made it easier to work and run a household. It is a fact that women have increasingly altered their reproductive behaviour; they can control their fertility with improved birth control methods. The decision to have children is related to the size of family they want. Now, couples are able to decide whether to have children, when to start, and the space between children (C Norville, 2003).

Low fertility is probably on the rise because more of the decisions to delay starting families, perhaps due to economic difficulties of young households, or the growing fragility of conjugal

relationships, which are often dissolved through divorce or separation before the desired number of children are born.



## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3. Introduction

This chapter present a detailed outline of the methodology to ensure this research study is completed and well understood: research perspectives, type and subtype of the study, the context of the study, ethical considerations, participants of the study, methods/tools of data collections and chapter summary.

#### 3.1 Research perspective

This study describes fertility rates in South Africa and Kenya, and some of its determinants among women of child bearing age (15-49): A comparatives study between South Africa and Kenya. Causes for fertility increase, fertility decrease and fertility stall in South Africa and Kenya respectively. Focus our interest in all nine provinces in South Africa and the eight provinces in Kenya.

This study used Secondary data obtained from Demographic and Health Survey: Secondary data is the data that has already been collected through primary sources and made readily available for researchers to use for their own research.

#### 3.2 Type and sub-type of the research

##### Quantitative research

Quantitative research is a type of research that is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics) Creswell (1994).

##### Advantages of quantitative research

- ❖ **Can be tested and checked.** Quantitative research requires careful experimental design and the ability for anyone to replicate both the test and the results. This makes the data you gather more reliable and less open to argument (Devault, 2020).



- ❖ **Straightforward analysis.** When you collect quantitative data, the type of results will tell you which statistical tests are appropriate to use. As a result, interpreting your data and presenting those findings is straightforward and less open to error and subjectivity (Devault, 2020).
- ❖ **Prestige.** Research that involves complex statistics and data analysis is considered valuable and impressive because many people don't understand the mathematics involved. Quantitative research is associated with technical advancements like computer modeling, stock selection, portfolio evaluation, and other data-based business decisions (Devault, 2020).

### **Disadvantage of quantitative research**

- ❖ **False focus on numbers.** Quantitative research can be limited in its pursuit of concrete, statistical relationships, which can lead to researchers overlooking broader themes and relationships. By focusing solely on numbers, you run the risk of missing surprising or big-picture information that can benefit your business.

### **Demography and Health Survey (DHS)**

Demography and Health Surveys collect a wealth of information on widely different topics for a sample of the population of the countries that participate in the DHS program (SO Rutstein, 2006).

### **The objectives of the DHS program are to:**

- ❖ Provide decision makers in participating countries with improved information and analyses useful for informed policy choices
- ❖ Improve coordination and partnerships in data collection at the international and country levels
- ❖ Develop in participating countries the skills and resources necessary to conduct high-quality demographic and health surveys
- ❖ Improve data collection and analysis tools and methodology
- ❖ Improve the dissemination and utilization of data.

South Africa Demography and Health Survey 2016 exercise was carried out by Statistics South Africa (Stats SA), in partnership with the South African Medical Research Council (SAMRC), conducted at the request of the National Department of Health (NDoH).

Kenya Demography and Health Survey was carried out by the Kenya National Bureau of Statistics (KNBS) in partnership with the Ministry of Health, National AIDS Control Council, Kenya Medical Research Institute and National Council for Population and Development, Kenya National Bureau of Statistics (KNBS) served as the implementing agency and, as such, had a primary role in the planning of the survey and in the analysis and dissemination of the survey results.

### **3.3 The context of the study**

The context of the study is South Africa and Kenya. And the focus is on fertility trends and its determinants amongst women of child bearing age (15- 49), fertility rates vary by place of residence, province, population group, age groups and educational attainment. Fertility rates among women are uniformed. The South Africa Demographic and Health Survey (SADHS) was implemented from June 2016 to November 2016 and KDHS was implemented from May 2014 to October 2014.

South Africa have had 3 successful DHS exercise 1998, 2003 and 2016 and Kenya have had 6 DHS exercise 1989, 1993, 1998, 2003, 2008 and 2014. However, SADHS 2016 and KDHS 2014 are the most recent survey in South Africa and Kenya. Which is the study's major interest.

### **3.4 Ethical Consideration**

#### **Confidential and Accountability**

The Demographic and Health Survey (DHS) data is used for the purpose of statistical reporting and analysis, and only for registered research topics.

Information's are presented in scientific and statistics methods, there are no names of individuals or household addresses in the data files.

### **3.5 The participants in the study**

Participants in the study were women of reproductive age (15-49) in South Africa in the year 2016 and Kenya in the year 2014. The SADHS covered a population of 8514 women and KDHS covered a population of about 31079 women respectively.

The population in the study were randomly selected women from household across the 9 provinces in South Africa and the 8 provinces in Kenya and questionnaire was allocated to eligible individuals in the household. The survey did not cover collective living quarters such as student hostels, old age home, hospital, prison and military barracks. It is representative of non-institutionalized and non-military persons or households in South Africa and Kenya. The survey target was on eligible female aged (15-49) and eligible men aged (15-54).

### **3.6 The methods and instrument used to collect data**

SPSS (Statistical Package for Social Science) was used to analyze the survey data, univariate analysis summarizes the single variables using frequency distribution and percentages, bivariate analysis which is the cross-tabulation of two variables to determine the relationship between independent and dependent variables and Chi-square test the relationship between dependent, independent variables and also reveals the p-values.

The SADHS 2016 followed a stratified two-stage sample design with a probability proportional to size sampling of PSUs (primary sampling units) at the first stage and systematic sampling of DUs (dwelling units) at the second stage.

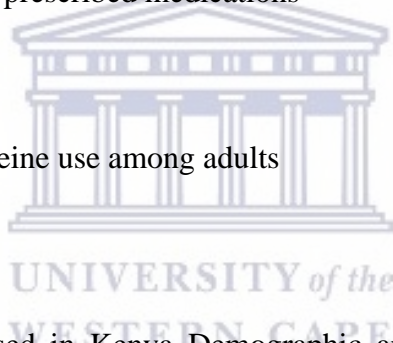
The 2014 KDHS used two subsamples of the NASSEP V (National Sample Survey and Evaluation Program) frame that were developed in 2013. Approximately half of the clusters in these two subsamples were updated between November 2013 and September 2014.

The instrument used to collect data by Demography and Health Survey was questionnaire:

Five questionnaires were used in South Africa Demography and Health Survey 2016: The Household Questionnaire, the individual Woman's Questionnaire, the individual Man's Questionnaire, the Caregiver's Questionnaire, the Biomarker Questionnaire. All these five questionnaires were designed to collect information on the following.

- ❖ Housing characteristics and household population

- ❖ Characteristics of respondents
- ❖ Marriage and sexual activity,
- ❖ Fertility
- ❖ Fertility preferences
- ❖ Contraception
- ❖ Infant and child mortality
- ❖ Maternal health care
- ❖ Child health
- ❖ Nutrition of children
- ❖ HIV/AIDS-related knowledge and behavior,
- ❖ HIV prevalence
- ❖ Adult and pregnancy-related mortality
- ❖ Use of health services and prescribed medications
- ❖ Adult morbidity
- ❖ Adult nutrition
- ❖ Tobacco, alcohol, and codeine use among adults
- ❖ Women's empowerment
- ❖ Domestic violence



Five questionnaires were also used in Kenya Demographic and Health Survey 2014: A full Household Questionnaire, a short Household Questionnaire, a full Woman's Questionnaire, a short Woman's Questionnaire, and a Man's Questionnaire. All these questionnaires were designed to collect information on the following

- ❖ Housing characteristics and household population
- ❖ Characteristics of respondents
- ❖ Marriage and sexual activity
- ❖ Fertility
- ❖ Fertility preferences
- ❖ Family planning
- ❖ Infant and child mortality
- ❖ Maternal health

- ❖ Child health
- ❖ Nutrition of children and women
- ❖ Malaria
- ❖ HIV/AIDS-related knowledge, attitudes, and behavior
- ❖ Noncommunicable diseases and other health issues
- ❖ Women's empowerment and demographic and health outcomes
- ❖ Domestic violence
- ❖ Adult and maternal mortality
- ❖ Female genital cutting

This study will focus on the women's questionnaire for both South Africa and Kenya respectively. Women questionnaire comprises of the following: information on children ever born and living, currently pregnant women, current use of contraceptives, type of contraceptive, fertility preference (Desire for more children) etc.

The following will be carried out in the subsequent chapter (Chapter 4: Data analysis)

- ❖ Frequency distribution- is a list or table that can help to determine the frequency or occurrence of various outcome in a sample.
- ❖ Univariate analysis: summarizes variables in singular form, using frequency distribution and percentages
- ❖ Cross tabulation (bivariate analysis)- Cross tabulation as known as contingency table is used to make comparison between variables. It establishes relationships between the dependent variable and the independent variables. For instance
- ❖ Chi-square- is a statistical measure to find association between variables. It will show indication of extent of association between variables.

### **3.7 Chapter summary**

This chapter outline in details the methodology starting with the research perspectives of the study: Comparative study between South Africa and Kenya using a secondary data derived from South Africa Demographic and Health Survey 2016 and Kenya Demographic and Health Survey 2014,

Types and sub-types of the research study: The study is Quantitative research. based on numeric data that are analyzed, which will allow measurements and inspection of the raw data. The context of the study: the study covered the entire 9 provinces in South Africa and the entire 8 provinces in Kenya based on trends and determinants of fertility among women of reproductive age (15-49) years. The participants in the study: individuals were randomly selected across the 9 provinces in South Africa and the 8 provinces in Kenya respectively. The methods and instruments used to collect data: survey raw data was downloaded from the Demographic and health survey site, in SPSS format for analysis.



## CHAPTER 4

### DATA ANALYSIS AND RESULTS

#### 4. Introduction

This chapter shows the results obtained from frequency distributions, cross-tabulation, and chi-square test on the raw data from South Africa Demographic and Health Survey 2016 (SADHS) and Kenya Demographic and Health Survey 2014 (KDHS).

The findings of the data analysis are divided into two different sections (Univariate analysis and Bivariate analysis).

The analysis was conducted with SPSS (Statistical package for social science) application, conclusions are drawn based on the results of the analysis.

The aim is to provide an insight on fertility trends and determinants amongst women of child-bearing age (15-49) in South Africa and Kenya respectively and to demonstrate some determinants of fertility.

#### 4.1 Univariate Analysis

Univariate analysis is a table that presents the frequency and percentage distribution of single variables. And the tables below are the SPSS (statistical package for social science) output of the following variables: Age, total children ever born, female ever given birth, and current contraceptive use by a method in South Africa in the 2016 and Kenya in the year 2014 respectively.

##### 4.1.1 PERCENTAGE DISTRIBUTION OF REPRODUCTIVE-AGED WOMEN (15-49) IN SOUTH AFRICA AND KENYA 2014.

The research study focused on women of reproductive age 15-49. Women that have been exposed to childbearing, contraceptives use, family planning, sterilization, abortions, marriages and etc. Table 4.1 below shows the frequency distribution of women by age group 15-49 in South Africa and Kenya. The SADHS 2016 (South Africa Demography and Health Survey) covered a population of 8514 total women in the year 2016 and KDHS (Kenya Demography and Health Survey) covered a population of 31079 total women in the year 2014 respectively. Women were interviewed regarding; fertility, children ever born, living children, birth interval, currently

pregnant women, current use of contraceptives, knowledge, family planning, contraceptive use, fertility preference (Desire for more children), work status, etc.

Table 4.1: Percentage distribution of reproductive-aged women (15-49) in South Africa and Kenya.

	<b>South Africa</b>	<b>Kenya</b>
<b>Age group</b>	<b>2016</b>	<b>2014</b>
15-19	17.7	19.6
20-24	16.5	17.4
25-29	16.4	19.1
30-34	15.2	14.3
35-39	12.1	12.4
40-44	11.3	9.6
45-49	10.7	7.6
	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>8514</b>	<b>31079</b>

#### **4.1.2 PERCENTAGE DISTRIBUTION OF TOTAL CHILDREN EVER BORN TO WOMEN OF REPRODUCTIVE AGE (15-49) IN SOUTH AFRICA IN THE YEAR 2016 AND KENYA IN THE YEAR 2014.**

6124 children ever born to 8514 total women of reproductive age 15-49 in South Africa in the year 2016. And every single child was alive at the time of the survey. Women with one child have the highest average 33.1%, followed by 31.7% of women with two children, 19% of women with three children, 8.9% of women with four children, 4% of women with 5 children, 1.7% of women with six children.

In Kenya 2014, 23245 children ever born to 31079 women of reproductive age (15-49).

**Table 4.2:** Percentage distribution of total children ever born to women of reproductive age 15-49 in South Africa and Kenya.



<b>Total children</b>	<b>South Africa 2016 %</b>	<b>Kenya 2014 %</b>
1	33.1	19.0
2	31.7	20.4
3	19.1	17.7
4	8.9	13.8
5	4.1	9.5
6	1.7	7.1
7	0.8	5.2
8	0.3	3.4
9+	0.2	3.8
	<b>100%</b>	<b>100%</b>
<b>Total (N)</b>	<b>6124</b>	<b>23245</b>

#### **4.1.3 AVERAGE FEMALE (15-49 YEARS) EVER GIVEN BIRTH TO AT LEAST ONE CHILD IN SOUTH AFRICA AND KENYA.**

Table 4.3 below presents the total number (8514) of reproductive-aged women 15-49 years in South Africa in the year 2016, followed by 6124 total births for all age groups, and the percentage of women who have given birth to at least one child in South Africa.

The result reveals that 71.9% of women have at least one child in South Africa. The peak of fertility is among the older age group, fertility increases with the age of women in South Africa.

13.6% of women in the age group 15-19 have at least one child, followed by 58.2% women in the age group 20-24 have at least one child, 85.8% of women in the age group 25-29, 90.8% women from the age group 30-34, 93.5% women in the age group 35-39, 93.9% women from the age group 40-44 and 93.8% of women from the age group 45-49 have at least one child.

Kenya's results showed that 74.8% of women have at least one child, fertility increases with the age of women in Kenya. 14.8% women from the age group 15-19, 67.7% women from the age group 20-24, 90.4% women from the age group 25-29, 96.7% women are from the age group 30-

34, 97.7% women are from the age group 35-39, 97.9% women are from the age group 40-44 and 98.3% women are from the age group 45-49 have at least one child in Kenya.

In general, there is no immense difference in the fertility rate of South Africa and Kenya. The fertility rate in both countries (South Africa and Kenya) increased as women progress in age.

**Table 4.3:** Average female (15-49 years) ever given birth to at least one child in South Africa and Kenya.

<b>SOUTH AFRICA 2016</b>			
<b>Age group</b>	<b>Births order number</b>	<b>Total female 15-49</b>	<b>% Female ever given birth</b>
15-19	205	1505	13.6
20-24	819	1408	58.2
25-29	1198	1397	85.8
30-34	1176	1295	90.8
35-39	965	1032	93.5
40-44	905	964	93.9
45-49	856	913	93.8
<b>Total (N)</b>	<b>6124</b>	<b>8514</b>	<b>71.9</b>

<b>KENYA 2014</b>			
<b>Age group</b>	<b>Births order number</b>	<b>Total female 15-49</b>	<b>% Female ever given birth</b>
15-19	898	6078	14.8
20-24	3661	5405	67.7
25-29	5366	5939	90.4
30-34	4307	4452	96.7
35-39	3780	3868	97.7
40-44	2923	2986	97.9
45-49	2310	2351	98.3
<b>Total</b>	<b>23245</b>	<b>31079</b>	<b>74.8</b>

#### 4.1.5 PERCENTAGE DISTRIBUTION OF WOMEN'S CURRENT USE BY METHOD TYPE IN SOUTH AFRICA AND KENYA.

In South Africa 2016, table 4.4 below shows 52.7% of women did not use any form of contraceptive methods, 47.0% of women used modern methods and 0.2% of women used traditional methods

In the perspective of current contraceptive methods in Kenya 2014, findings show that the majority of women 61.3% did not use any form of contraceptives. 35.5% of women use modern methods, 3.1% of women use traditional methods and 0.2% of women use folkloric methods. Over half (61.3%) of the total number (31079) of women do not use any form of contraceptives. This reveals one of the reasons, the fertility rate is on the increase in Kenya. Most Kenya women do not use any form of contraceptives and still desire more children than in South Africa.

**Table 4.4:** Percentage distribution of women's current use by method type in South Africa and Kenya

<b>South Africa 2016</b>	
<b>Current use by method type</b>	<b>Percentage</b>
No methods	52.7
Traditional methods	0.2
Modern method	47.0
	<b>100%</b>
<b>Total women</b>	<b>8514</b>

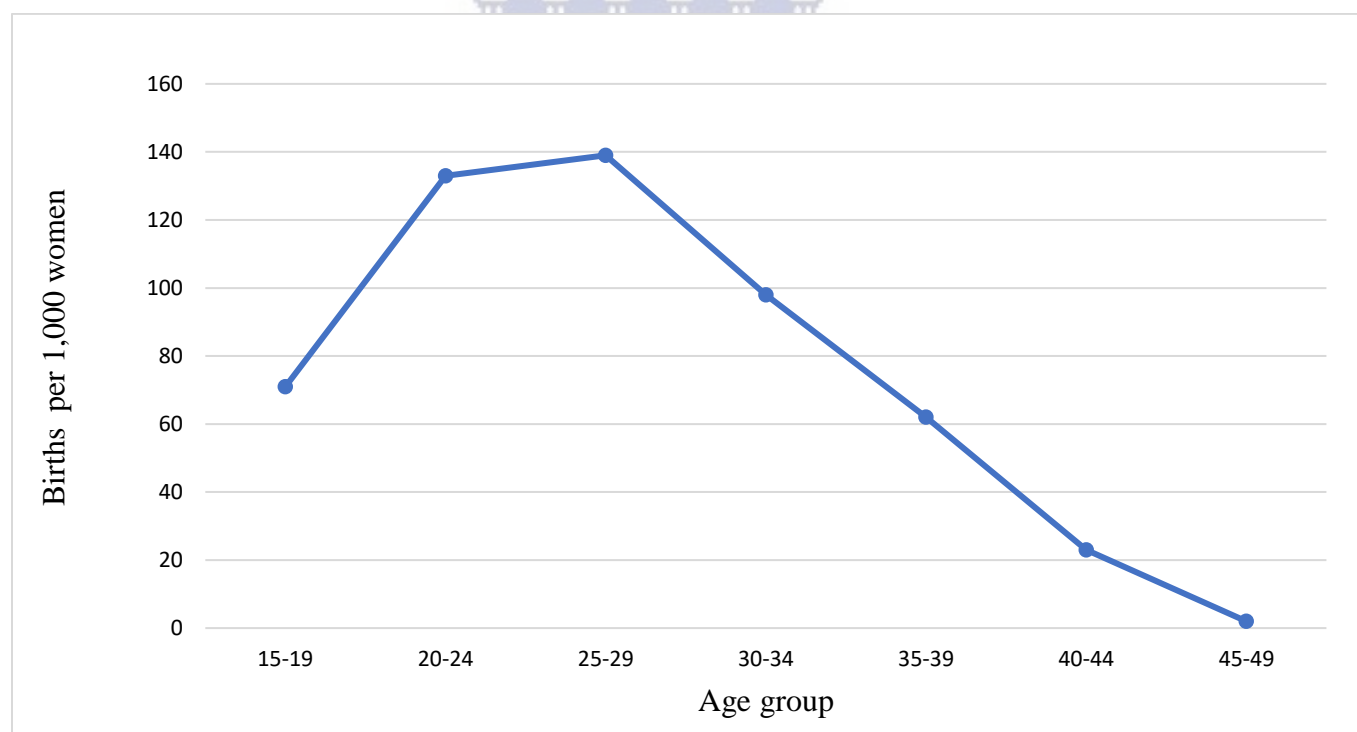
<b>Kenya 2014</b>	
<b>Current use by method type</b>	<b>Percentage</b>
No method	61.3
Folkloric method	0.2
Traditional method	3.1
Modern method	35.5
	<b>100%</b>
<b>Total women</b>	<b>31079</b>

#### 4.1.6 AGE-SPECIFIC FERTILITY RATES (ASFRs) IN SOUTH AFRICA 2016 AND KENYA 2014.

The age-specific fertility rate for South Africa 2016 in figure 4.6 showed a consistent increase of births from 71 births per 1000 women in the age group 15-19 to 139 births per 1000 women in the age group 25-29. Fertility began to decrease from age group 30-34 with 98 births per woman to 2 births in the age group 45-49 in South Africa. The peak of fertility is the age group 25-29 with 139 births per 1000 women and followed by 133 births per 1000 women in the age group 20-24.

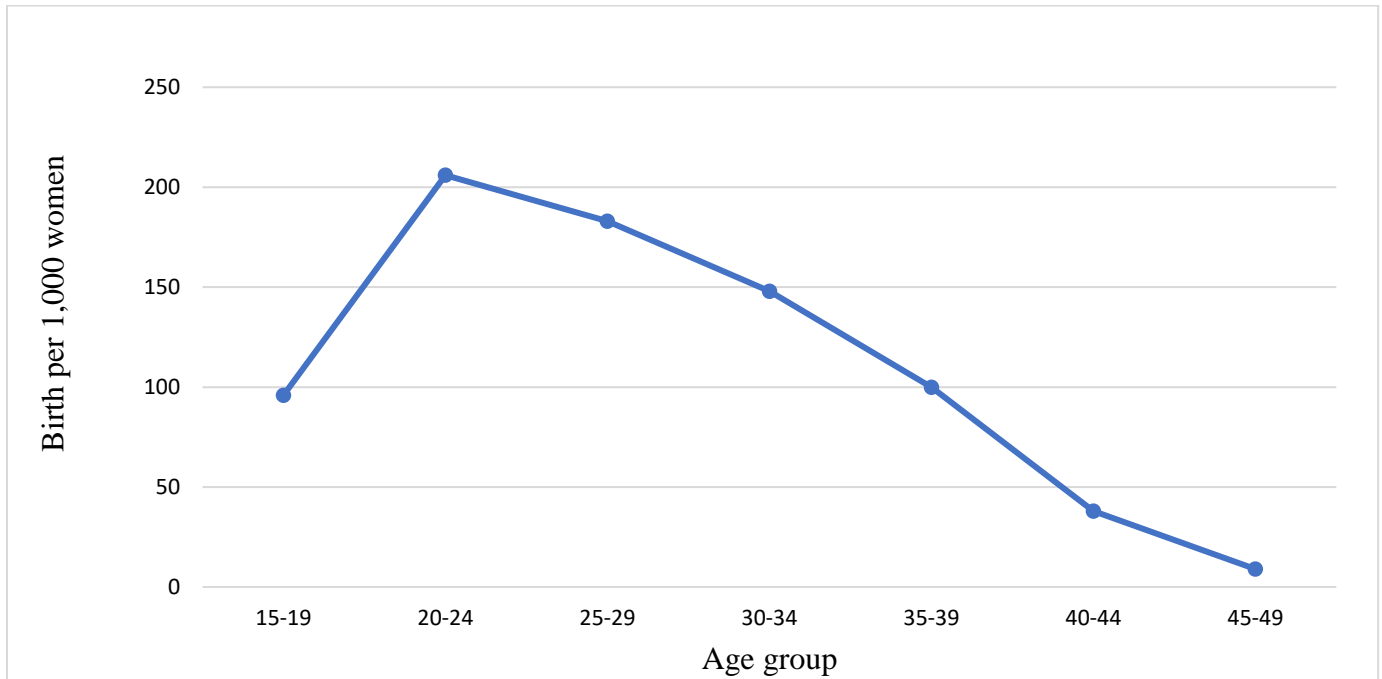
Kenya's age-specific fertility rate in 2014 (figure 4.7). The peak of childbearing is the age group 20-24 with 206 births per 1000 women. From the age group 25-29, 30-34, 35-39, 40-44 and 45-49 fertility decreased consistently. 183 births per 1000 women in the age group 25-29, 148 births per 1000 women in the age group 30-34, 100 births per 1000 women in the age group 35-39, 38 births per women in the age group 40-44 and 9 births per 1000 women in the age group 45-49.

**Figure 4.6: Age-specific fertility rate for South Africa 2016**



Source: South Africa Demographic and Health Survey report (SADHS 2016).

**Figure 4.7: Age-specific fertility rate for Kenya 2014**



**Source: Kenya Demographic and Health Survey report (KDHS 2014).**

#### **4.1.7 TREND IN TOTAL FERTILITY RATE IN SOUTH AFRICA FROM 1989- 2016**

Figure 4.8 below, the trend in total fertility rate over the last 25 years in South Africa, The TFRs in South Africa showed a decrease from 2.9 in the year 1989 to 2.1 in the year 2003. In the year 2016, the TFR increased slightly, from 2.1 in the year 2003 to 2.6 in the year 2016.

Generally, fertility increase, decrease, and fertility stall has not been uniformed globally. Studies reveal Sub-Saharan Africa, with the highest fertility levels, total fertility fell from 6.3 births per woman in 1990 to 4.6 in 2019. (WFFP 2020). High levels of fertility in Sub-Sahara Africa are associated with several factors: cultural, socio, environmental, etc.

Sub-Sahara Africa has set up policies to curb fertility increase and child mortality. South Africa is one of the countries with a consistent decrease in fertility rate and with contraceptive use as a major component. In 1970s and 1980, contraceptives use accompanied the rise in public provision of family planning services. 35 percent of African women living in white areas in 1974 had ever used contraception (Norling, 2019). In the homelands, this value was lower, at 17 percent.

By the late 1980s, the share of women who had ever used contraception rose by about 40 percentage points in both white areas and homelands (Norling, 2019). Women currently using contraception similarly rose over time countrywide and remained higher in white areas. These statistics indicate that, between the early 1970s and late 1980s, the use of contraception among African women rose substantially and African women living in white areas remained consistently more likely to use contraception than African women living in homelands. African women that were using contraception, those living in white areas in 1987 had been doing so for forty-one months on average, slightly longer than the thirty-nine-month average in homelands (Norling, 2019).

The remarkable decline in fertility occurred during the formation, expansion, decay, and dissolution of the apartheid state in South Africa. Starting in the early 1970s, the national government provided free family planning services in white areas of the country. Although many African leaders expressed apprehension, over the following two decades the rates of contraception use by African women doubled and birth rates fell. Despite a rebound in childbearing in the 1980s, lifetime fertility fell by one child per woman in white areas relative to homelands during the last half of the apartheid era. Lifetime fertility in South Africa declined sharply among African women born in white areas in the early 1950s, the first cohort to enter their childbearing years as the national government provided family planning services (Norling, 2019)

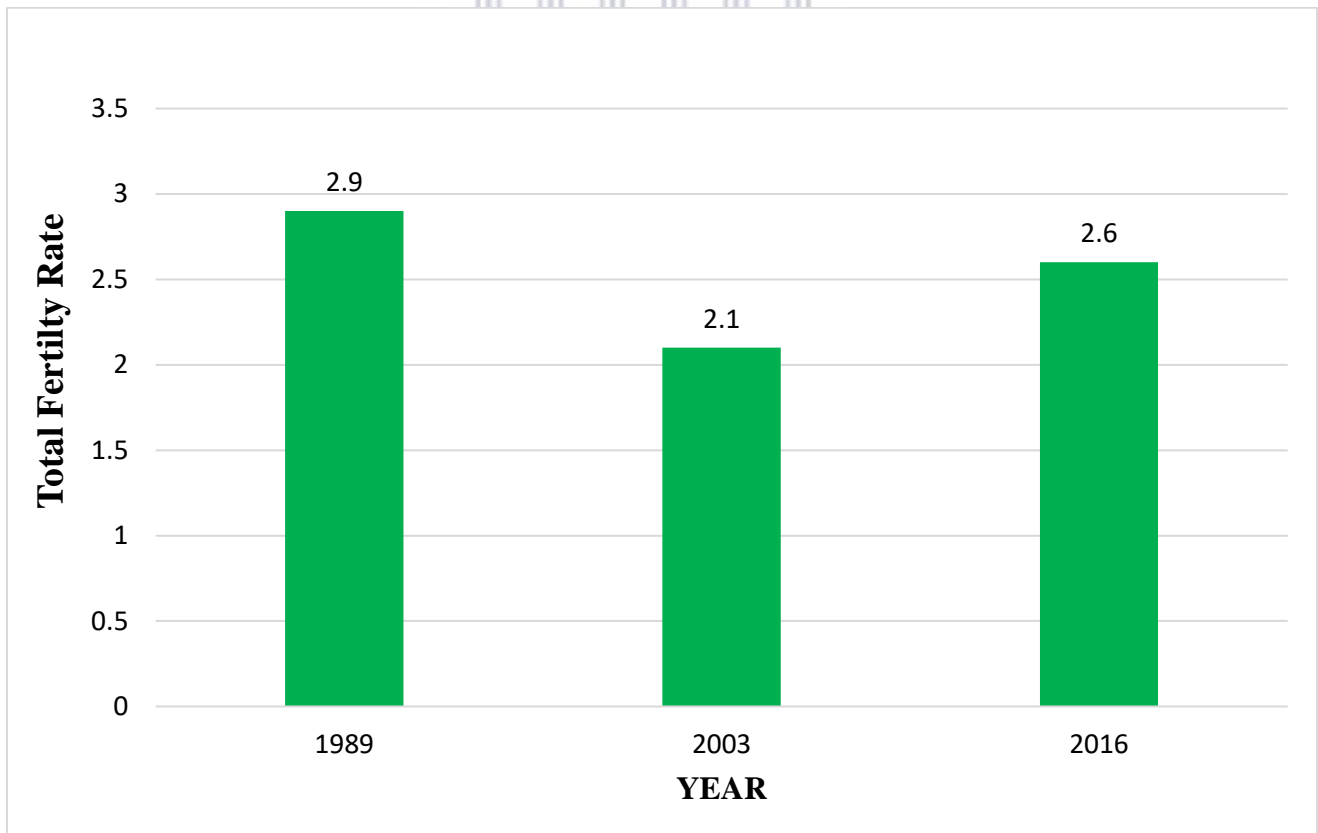
Over the last 20 years in Kenya, figure 4.9 below showed a consistent decrease in Total Fertility Rates from 1989 to 1998, afterward, the Total Fertility Rate increased slightly in 2003, and from the year 2008, the decrease has remained stable up to the year 2014. In the past years, a Kenyan woman could give birth to 8 children per woman. Kenya Fertility Survey 1977-78 (KFS). Between the year 1970s -1990s total fertility in Kenya fell from some eight (8) births per woman to about five (5): a decline of around 40 percent. (John Blacker, 2005). The TFRs in Kenya showed a consistent decreasing trend from 1989 to 2014.

Kenyan women by and large do not use modern contraception and very few have voluntary abortions (R Anker, 1982). The most important of these practices for fertility outcomes is breastfeeding. Breastfeeding blocks ovulation, although the effect wears off several months before the baby is weaned (O Frank, 1987). Averagely, women in Kenya breastfeed for 16-17 months and Kenyan women typically abstain from sexual relations after the birth of a baby, in order to avoid

an early next pregnancy (O Frank, 1987). Abstinence has been getting shorter, however: its average duration was only about four months in the late 1970s. Nevertheless, with the combined effects of breastfeeding and abstaining, the average Kenyan woman is not likely to become pregnant again for some 13 months after each birth (Bienen, 1974). Breastfeeding and abstinence as practiced are deliberate spacing behaviors by individual women (O Frank, 1987).

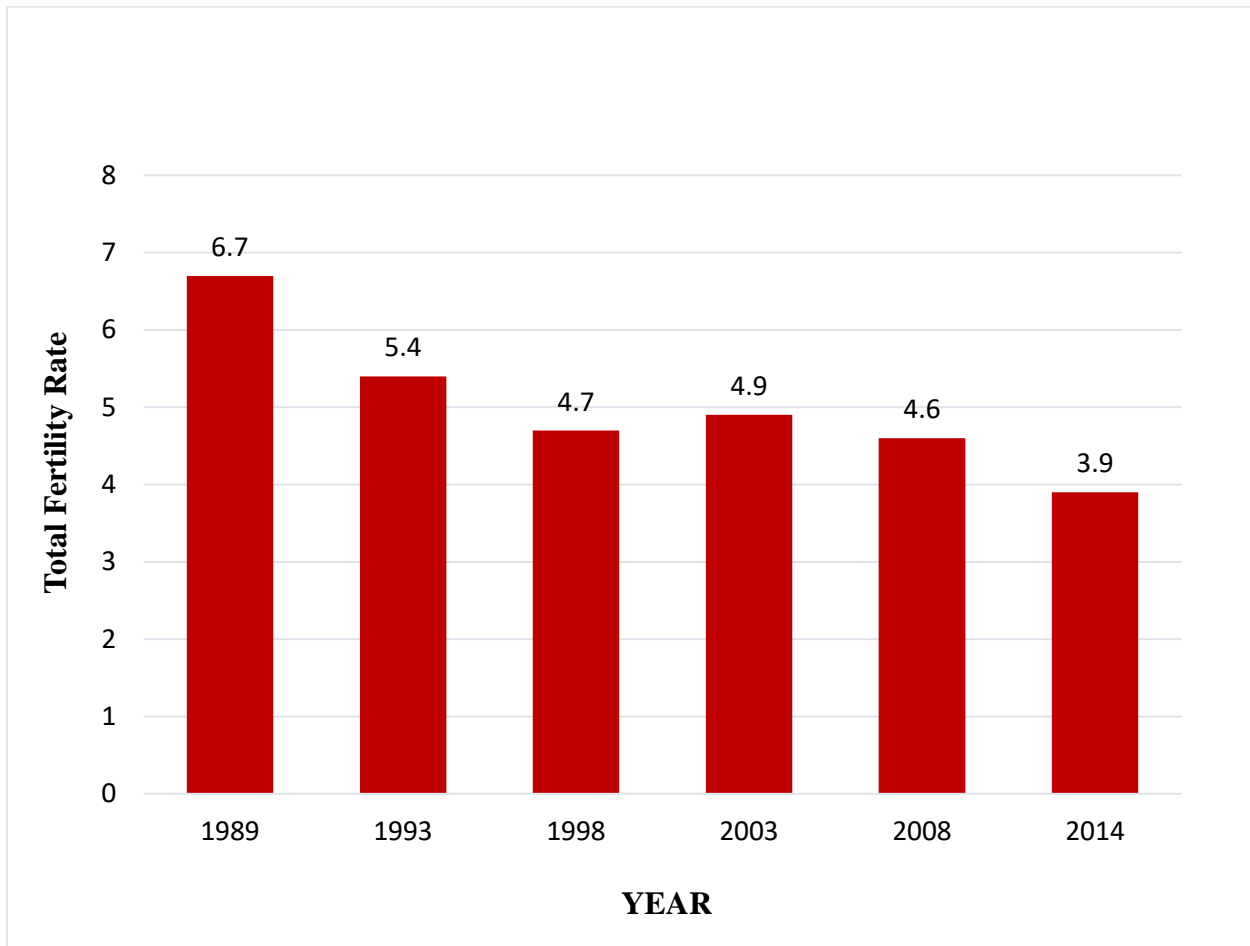
The other main factors holding Kenyan fertility below its biological limits are connected with marriage and sterility. The mean age at marriage for women appears to have slowly increased from about 18.5 years in the early 1960s to about 20 in the late 1970 (Lesthaeghe, 1986). The increasing trend in Kenyan fertility since the 1950s can be largely accounted for by changes in this same factors. Reduction in the traditionally lengthy period of abstinence from sexual relations after childbirth is probably the principal explanation. But also contributing to the fertility increase has been a decline in the practice of very long breastfeeding and perhaps lessened sterility as a result of the wider availability of antibiotics (Bleek, 1976).

**Figure 4.8: Trend in Total Fertility Rate in South Africa from 1989- 2016.**



Source: South Africa Demographic and Health Survey report (SADHS)

Figure 4.9: Trend in Total fertility Rate in Kenya from 1989-2014.



Source: Kenya Demographic and Health Survey report (KDHS 2014).



## 4.2 BIVARIATE ANALYSIS

Bivariate analysis: Cross-tabulation is used to obtain a two-way table of percentages, testing relationships between two variables, that is, the independent variables and the dependent variables and to assess the significance of the relationship (p-values).

Bivariate analysis allows us to answer two questions:

- Is there a relationship between the two variables?
- If so, what is the direction of the relationship?

### 4.2.1 PERCENTAGE DISTRIBUTION OF WOMEN BY PLACE OF RESIDENCE IN SOUTH AFRICA 2016 AND KENYA 2014.

Table 4.1 below showed 4805 (56.4%) total number of women lived in urban areas and 3709 (43.6%) lived in the rural women of South Africa. 19.8% of young rural women in the age group 15-19 and 16% of urban women aged. 16.7% of urban women and 16.4% of rural women in the age group 20-24, 16.6% of urban women, and 16.2% of rural women in the age group 25-29. In the age group 30-34, 15% urban women and 15.4% rural women. In the age group 35-39, 13% urban women and 11% rural women. 11.8% of urban women and 10.6% of rural women in the age group 40-44. 10.9% urban women and 10.5% rural women in the age group 45-49 in South Africa 2016.

The distribution of women by place of residence in South Africa in 2016 showed a significant relationship ( $\chi^2 = 0.000$ ).

In Kenya, table 4.1 showed a record of 19465 (62.6%) total rural women and 11614 (37.4%) urban women. There was a notable increase in the percentage of women in the age group 20-24, 25-29, and 30-34 living in the urban area. In the age group 15-19, 21.2% of women are from rural areas and 16.8% of women are from urban areas. The proportion of urban women began to increase from the ages of 20-34. From the age group, 35-49 women in the urban areas decreased marginally. The percentage of women dwelling in rural areas of Kenya increased with age over time. This

indicates that Kenya women spend their most youthful age in the urban areas and as women age, they tend to migrate back to the rural areas of Kenya.

Distribution of women by place of residence in Kenya 2014 showed a significant relationship ( $\chi^2 = 0.000$ )

In general, South African's are mainly urban dwellers and Kenyans are mainly rural dwellers. The migration of women from the urban area to rural areas in Kenya may shoot up fertility in the rural areas. And the migration of women from the rural area to urban areas of South Africa may enhance the rise of fertility in the urban area of South Africa.

In South Africa, women increased in the urban areas across all age groups except for the age group 15-19. Women migrate from rural to urban areas of South Africa immediately after high school from age 20-49. This could be associated with the search for a job, academic pursuit, and a better life for women in South Africa.

**Table 4.1:** Percentage distribution of women by place of residence in South Africa 2016 and Kenya 2014.

Age group	South Africa 2016		Kenya 2014	
	Urban	Rural	Urban	Rural
15-19	16.0	19.8	16.8	21.2
20-24	16.7	16.4	19.7	16.0
25-29	16.6	16.2	21.9	17.5
30-34	15.0	15.4	15.3	13.7
35-39	13.0	11.0	11.6	12.9
40-44	11.8	10.6	8.6	10.2
45-49	10.9	10.5	6.1	8.5
	$\chi^2 = 0.000$		$\chi^2 = 0.000$	
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total Women</b>	<b>4805</b>	<b>3709</b>	<b>11614</b>	<b>19465</b>

#### **4.2.2 PERCENTAGE DISTRIBUTION OF WOMEN BY EDUCATIONAL ATTAINMENT IN SOUTH AFRICA 2016 AND KENYA 2014.**

Percentage distribution of women in South Africa by the level of education table 4.2, showed 109 women had no form of education, 524 total women had incomplete primary school education, 338 total women had completed primary school education, 4409 women had incomplete secondary school education, 2172 total women had complete secondary school education and 881 total women had higher education in South Africa. In the age group 15-19, the highest percentage of 28% women had incomplete secondary, followed by 19.5% of women with completed primary school. In age groups 20-24, 25-29, and 30-34, approximately 23% of women had completed secondary school education and higher education. However, the percentage of females in the age group 35-49 showed a consistent increase among women with no form of education and incomplete primary school in South Africa.

Distribution of women by educational attainment in South Africa in 2016 showed a significant relationship ( $\chi^2 = 0.000$ ).

In Kenya 2014 percentage distribution of women by the level of education reveals, 4183 women had no form of education, 8431 women had incomplete primary school education, 7182 women had completed primary school education, 4537 women had incomplete secondary school, 4058 women had completed secondary school and 2688 women had higher education in Kenya. 44.8% of women in the age group 15-19 had incomplete secondary school, over 20% of women in the age group 20-24, 25-29, and 30-34 had higher education and completed secondary school education. Age group 35-39, 40-44, and 45-49 approximately 14% of females had no form of education in Kenya.

Distribution of women by educational attainment in Kenya in 2014 showed a significant relationship ( $\chi^2 = 0.000$ ).

In general percentage distribution of women in the young age group 20-24, 25-29, and 30-34 had higher education and completed secondary school. The percentage distribution of females in the older age group 35-39, 40-44, and 45-49 had no form of education. The increase of women from higher education in the young age group to no form education in the older age group. Indicates that younger women are more educated than the older women. The increase in young women's

educational attainment could be associated with low fertility and the increase in women with no form of education could be associated with high fertility. Education is a determinant of fertility in South Africa and Kenya.

**Table 4.2:** Percentage distribution of women by educational attainment in South Africa 2016 and Kenya 2014.

**South Africa 2016**

Age group	No education	Incomplete primary	Complete primary	Incomplete secondary	Complete secondary	Higher
15-19	2.1	10.3	19.5	28.1	5.6	2.0
20-24	3.7	5.3	11.8	15.2	23.1	18.2
25-29	3.2	10.9	10.4	14.7	21.3	21.5
30-34	13.2	11.8	15.1	13.9	17.1	19.6
35-39	15.8	13.5	11.5	11.0	12.9	14.6
40-44	24.7	20.0	11.2	9.3	11.4	13.4
45-49	37.4	28.1	20.4	7.8	8.6	10.7
			$\chi^2 = 0.000$			
<b>Total women</b>	<b>100%</b> <b>190</b>	<b>100%</b> <b>524</b>	<b>100%</b> <b>338</b>	<b>100%</b> <b>4409</b>	<b>100%</b> <b>2172</b>	<b>100%</b> <b>881</b>

### Kenya 2014

Age group	No education	Incomplete primary	Complete primary	Incomplete secondary	Complete secondary	Higher
15-19	8.0	28.1	11.2	44.8	11.0	3.6
20-24	15.1	12.9	17.0	17.9	25.8	22.6
25-29	23.0	15.3	21.3	11.7	20.9	28.7
30-34	15.8	14.3	16.7	7.9	13.3	18.2
35-39	14.7	12.5	14.7	7.3	12.0	12.5
40-44	12.7	10.8	9.8	5.4	9.5	7.8
45-49	10.6	6.2	9.4	5.0	7.5	6.7
$\chi^2 = 0.000$						
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>4183</b>	<b>8431</b>	<b>7182</b>	<b>4537</b>	<b>4058</b>	<b>2688</b>

### 4.2.3 PERCENTAGE DISTRIBUTION OF WOMEN BY ETHNIC GROUP IN SOUTH AFRICA 2016

Table 4.3 below showed that 7359 total women are black/African, 214 women are white, 848 women are Coloured, 88 women are Indian/Asian and 5 are other women. In the age group 15-19, approximately 18% of women are Black/African and Coloured, followed by Indian/Asian and White. 17% of women in the age group 20-24 and 25-29 are Black/African, followed by Indian/Asian and Coloured. In the age group 30-34, the highest percentage (22.7%) is the Indian/Asian women and 15% of women are Black/African and Coloured. 16% of women in the age group 35-39 and 40-44 are White, followed by Coloured and Indian. And on the last age group 45-49, 22% women are White and Indian/Asian.

The distribution of women by ethnicity in South Africa in 2016 showed a significant relationship ( $\chi^2 = 0.000$ )

Table 4.4 below present women by ethnic group in Kenya in the year 2014 Pokomo women have the highest average 25.0% in the age group, followed by the Iteso, Boran, Turkana, Gabbra, Kuria, Orma, Mbere, other women, Kalenji, Kamba, Luhya, Luo, Maasai, Swahili, and Somali women

had the average of over 20%. In the age group 20-24 29.5% of Mbere women, followed by the Luhya, Luo, Maasai, Mijikend/Swahili, Turkana, Samburu, Pokomo, Iteso, Gabbra, Kuria and Rendille had an average of 21%, 32.6% Rendille women in the age group 25-29, 23% of Boron women, 24% of Samburu women, 27% of Gabbra women and Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Maasai, Meru, Somali, Turkana and other women had an average of 20%. In the age group 30-34, Taita/Taveta, Embu, Kamba, Kikuyu, Meru, Somali, Turkana, Kuria women had 16% average. 16.2% are the Iteso women in the age group 35-39, 15.0% Taita/ Taveta women are in the age group 40-44 and in the last age group, 10.4% women are Kikuyu women in Kenya.

The distribution of women by ethnicity in Kenya in 2014 showed a significant relationship ( $\chi^2 = 0.000$ ).

The general observation in South Africa: there are more young women in the Black/African community from the ages of 15-19, 20-24, and 25-29. As women advanced in age, the white community began to increase from the ages 35-39,40-44 and 45-49. The middle age group 30-34, the Indian/Asian are predominant.

Kenya the most populated ethnic group is the Kikuyu women, Kalenjin women, Luhya women, Luo women, Kamba women, Somali women, Kisii women, Mijikenda/Swahili women, Meru women, Turkana women, Maasai women, Samburu women, other women, Taita/ Taveta women, Boran women, Embu women, Pokomo women, Iteso woman, Gabbra women, Kuria women, Orma women, Mbere women, and Rendille women.

The depopulated ethnic group is the Rendille women, Mbere women, and Orma women.

**Table 4.3:** Percentage distribution of women by Ethnic group in South Africa 2016.

### South Africa 2016

Age group	Black/African	White	Coloured	Indian/Asian	Other
15-19	18.0	8.9	17.9	11.4	0.0
20-24	17.2	10.7	12.4	13.6	0.0
25-29	16.7	14.5	14.9	6.8	40.0
30-34	15.3	12.1	14.3	22.7	20.0
35-39	11.8	15.0	14.4	9.1	20.0
40-44	11.0	16.8	12.6	14.8	0.0
45-49	9.9	22.0	13.6	21.6	20.0
	$\chi^2 = 0.000$				
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>7359</b>	<b>214</b>	<b>848</b>	<b>88</b>	<b>5</b>

Table 4.4: Percentage distribution of women by ethnic group in Kenya 2014.

Age group	UNIVERSITY of the WESTERN CAPE Kenya 2014										
	Embu	Kalenjin	Kamba	Kikuyu	Kisii	Luhya	Luo	Maasai	Meru	Swahili	Somali
15-19	14.6	19.7	19.6	15.0	18.6	22.1	21.4	20.8	17.0	23.1	21.9
20-24	15.8	18.4	16.8	14.2	16.4	18.9	20.1	20.6	16.1	18.6	15.9
25-29	16.3	20.5	18.0	18.4	19.5	18.4	20.1	19.4	20.3	17.4	20.4
30-34	15.3	13.6	15.8	16.0	15.5	12.8	13.9	13.6	15.3	11.7	14.8
35-39	14.1	12.3	12.7	13.7	12.6	11.8	10.4	11.9	13.1	14.5	12.7
40-44	13.6	9.2	9.0	12.2	9.3	8.5	7.6	7.6	10.7	8.1	9.6
45-49	10.3	6.4	8.1	10.4	8.1	7.5	6.5	6.1	7.6	6.6	4.7
	$\chi^2 = 0.000$										
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>398</b>	<b>4335</b>	<b>2950</b>	<b>5033</b>	<b>1788</b>	<b>3653</b>	<b>3060</b>	<b>655</b>	<b>1593</b>	<b>1708</b>	<b>1815</b>

**Continued table 4.4.....**

Taveta	Turkana	Samburu	Pokomo	Iteso	Boran	Gabbra	Kuria	Orma	Mbere	Rendille	Other
17.7	19.8	16.9	25.0	21.9	19.8	19.9	19.5	23.3	21.1	15.1	25.3
10.4	19.0	20.5	18.8	19.8	17.7	18.8	22.2	16.5	29.5	19.8	16.2
14.8	18.1	23.5	15.0	14.4	22.9	27.4	13.0	16.5	16.8	32.6	18.0
17.7	14.5	14.0	12.5	11.5	13.0	12.4	14.6	9.7	7.4	10.5	13.3
14.8	12.3	8.7	14.4	16.2	11.3	9.1	14.1	12.6	12.6	5.8	8.3
15.0	9.3	9.5	8.4	11.2	9.4	7.0	11.4	13.6	8.4	7.0	9.6
9.5	7.0	6.8	5.9	5.0	5.9	5.4	5.4	7.8	4.2	9.3	9.4

$\chi^2 = 0.000$

<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>452</b>	<b>717</b>	<b>620</b>	<b>320</b>	<b>278</b>	<b>424</b>	<b>186</b>	<b>185</b>	<b>103</b>	<b>95</b>	<b>86</b>	<b>617</b>

#### **4.2.5 PERCENTAGE DISTRIBUTION OF WOMEN BY CURRENT MARITAL STATUS IN SOUTH AFRICA 2016 AND KENYA 2014.**

Current marital status in South Africa 2016 table 4.5 below. 5134 total never-in-union women, 1825 married women, 1016 women living with a partner, 202 widowed women, 95 divorced women, and 242 women no longer living together with a partner or separated. Age group 15-19, 28.5% never in union women and 2.8% women living with partners. 22.6% never in-union women in the age group 20-24, and 15% of women living with partners. Age group 25-29, 22.6% of women living with a partner, followed by 17.3% never-in-union in union women and 14% married women and women no longer living with a partner. 23.8% of women living with partners in the age group 30-34, followed by 21% married women and women no longer living with a partner. 20% married and widowed women in the age group 35-39, followed by 16.5% women no longer living with partner and 15% women living with a partner. Age group 40-44, 28.4% divorced women, 23.6% women separated from partner and 21% married and widowed women. 48.5% widowed women in the age group 45-49, 36.8% divorced women, and 20% women separated from partners and married women.



**Never in union women:** Are women that are not in any form of relationship or not committed to anyone. They have never been married or divorced.

The association between women and current marital status in South Africa in 2016 showed a statistically significant ( $\chi^2 = 0.000$ ).

Kenya's current marital status 2014. 60.8% never-in-union women in the age group 15-19, followed by 5.4% of women living with a partner and 4% married and divorced women. In the age group 20-24, 22.4% never in union women and women living with a partner followed by 16% married and separated women. 24% married women, women separated from partner, women living with partner in the age group 25-29 and 18.7% divorced women. In the age group 30-34, 19% of women separated from a partner, married women, divorced women, and women living with partners. 20% divorced women in the age group 35-39, followed by 19% widowed women and women separated from a partner, 16% married women and women living with a partner. In the age group 40-44, 25.4% of widowed women, followed by 15.4% divorced women, 13% separated and married women. 29.5% widowed women in the age group 45-49, 13.6% divorced women and 8% married, living with partner women and separated women.

The association between women and current marital status in Kenya 2014 showed a statistically significant ( $\chi^2 = 0.000$ ).

In the perspective of current marital status, findings show that majority of young women from the ages 15-19, 20-24, 25-29, and 30-34 are never in union women and women living with partners in South Africa. In the age group 35-39, 20% of women are married. And for the older age group, 40-44 and 45-49 women are either divorced or widowed. Previous studies have shown that over the years the age at marriage has increased in South Africa 2016 and marital status does not influence fertility.

Over 60% in the age group 15-19 and 20-24 are never-in-union women in Kenya. Married women increased from the age group 25-29 and 30-34. From the age group 35-39, 40-44, and 45-49 women were divorced and widowed in Kenya in 2014.

**Table 4.5:** Percentage distribution of women by current marital status in South Africa 2016 and Kenya 2014.

**South Africa 2016**

Age group	Never in union	Married	Living with partner	Widowed	Divorced	No longer living together/separated
15-19	28.5	0.7	2.8	0.5	0.0	1.2
20-24	22.6	4.3	15.0	0.5	5.3	4.5
25-29	17.3	13.0	22.6	2.5	3.2	14.0
30-34	11.3	21.4	23.8	9.4	13.7	20.2
35-39	8.2	20.0	15.0	19.8	12.6	16.5
40-44	6.8	21.0	10.9	18.8	28.4	23.6
45-49	5.3	19.6	9.9	48.5	36.8	19.8
	$\chi^2 = 0.00$					
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>5134</b>	<b>1825</b>	<b>1016</b>	<b>202</b>	<b>95</b>	<b>242</b>

**Kenya 2014**

Age group	Never in union	Married	Living with partner	Widowed	Divorced	No longer living together/separated
15-19	60.8	4.0	5.4	0.3	3.6	3.0
20-24	22.4	16.1	21.6	3.2	10.1	15.6
25-29	8.3	24.3	23.0	9.8	18.7	23.8
30-34	3.4	18.8	18.1	12.8	18.6	19.3
35-39	2.3	16.0	14.7	18.9	20.0	17.6
40-44	1.6	11.9	9.3	25.4	15.4	13.0
45-49	1.2	8.9	7.9	29.5	13.6	7.8
	$\chi^2 = 0.00$					
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>8575</b>	<b>17751</b>	<b>1285</b>	<b>1191</b>	<b>721</b>	<b>1556</b>

#### 4.2.6 PERCENTAGE DISTRIBUTION OF TOTAL CHILDREN BY WEALTH INDEX IN SOUTH AFRICA 2016.

Table 4.6 shows the proportion of total children ever born by wealth index. 33% of women with no children are from the richest household and 31% of women with no children are from the richer household. 24% of women with one child are from the richer household, richest household middle household, and poorer household respectively. 25.5% of women with two children are from the richest household, followed by the middle household, poorer household, and richer household. Women with three children and above are majorly from the poorer household, poorest household, and middle household in South Africa.

The association between total children ever born by wealth index in South Africa 2016 showed a statistically significant ( $\chi^2 = < .001$ ).

Kenya's wealth index. 31% of women with no child are from the richest household and richer household. 21% of women with one child are from richest household and 16.9% of women with one child are from richer households. 20% of women with two children are from the richest household and richer household. 15% of women with three children are from the richer household and middle households. 11.9% of women with four children are from the poorer household, poorest household, middle household. The population of women with five children and above are from the poorer household and poorest households in Kenya.

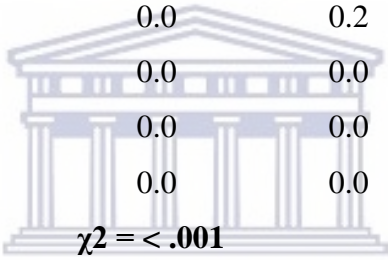
The association between total children ever born by wealth index in Kenya 2014 showed a statistically significant ( $\chi^2 = 0.000$ ).

Collectively, women with few children are from the richest household in South Africa 2016 and Kenya 2014. Women with 4 children and above are from the poorest household in South Africa and Kenya. Fertility rate decreases as woman's wealth increase in South Africa and Kenya.

**Table 4.6:** Percentage distribution of total children by Wealth index in South Africa and Kenya.

**South Africa 2016**

Total children ever born	Poorer	Poorest	Middle	Richer	Richest
0	24.4	27.2	26.6	31.1	33.0
1	23.6	21.7	24.3	24.9	24.5
2	23.1	19.7	23.7	22.9	25.5
3	15.5	13.8	13.3	13.5	12.0
4	6.9	9.0	6.7	4.8	3.4
5	3.9	4.0	2.9	2.3	1.1
6	1.6	2.4	1.3	0.3	0.5
7	0.7	1.1	0.7	0.1	0.0
8	0.2	0.4	0.5	0.0	0.0
9	0.1	0.3	0.0	0.2	0.0
10	0.1	0.1	0.0	0.0	0.0
11	0.0	0.1	0.0	0.0	0.0
12	0.0	0.1	0.0	0.0	0.0
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total children</b>	<b>1865</b>	<b>1763</b>	<b>1956</b>	<b>1733</b>	<b>1197</b>



**Kenya 2014**

Total children ever born	Poorer	Poorest	Middle	Richer	Richest
0	20.3	23.8	25.4	26.5	31.1
1	9.3	11.4	13.4	16.9	21.3
2	10.9	13.8	14.8	17.6	20.2
3	11.5	12.8	13.7	15.1	13.5
4	11.9	11.4	11.0	10.4	6.7
5	9.4	8.8	8.0	5.6	3.3
6	8.8	6.3	5.4	3.5	1.8
7	7.0	5.1	3.8	1.9	0.9
8	5.0	3.2	2.2	1.2	0.5
9	3.0	1.5	1.0	0.6	0.3
10	1.6	1.1	0.7	0.4	0.2
11	0.8	0.7	0.4	0.2	0.1
12	0.4	0.2	0.1	0.1	0.0
13	0.1	0.0	0.1	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0
	$\chi^2 = .000$				
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total children</b>	<b>7262</b>	<b>5970</b>	<b>5946</b>	<b>5958</b>	<b>5943</b>

#### **4.2.7 PERCENTAGE DISTRIBUTION OF WOMEN BY PROVINCE (REGION) IN SOUTH AFRICA 2016 AND KENYA 2014.**

Table 4.7 below presents the percentage distribution of women by province South Africa 2016. 656 total Western cape women, 1041 Eastern cape, 718 Northern cape, 854 Free state, 1360 KwaZulu Natal, 863 North west, 863 Gauteng, 1054 Mpumalanga, and 1105 Limpopo. 20% of Women in the age group 15-19 are Limpopo, KwaZulu-Natal, and Eastern cape, followed by 18% Mpumalanga and Northern Cape, 16% Free state, Western cape, and North west. 19% women in KwaZulu-Natal in the age group 20-24, 17% Gauteng, Eastern cape, Free state, Mpumalanga, and Limpopo. 20% Mpumalanga women from the age group 25-29, followed by 19% Gauteng and Northwest, 16% Free state and KwaZulu-Natal, Northern cape Limpopo and Eastern cape. In the age group, 30-34, 16% of women in KwaZulu Natal, Mpumalanga, Gauteng Western cape, North west, and Free state. 15% Northern cape women in the 35-39, Western cape, Gauteng and North west. 14.3% North west women, followed by Northern cape and 12% Gauteng, Eastern cape, Western cape, Limpopo, and Free state. In the last age group 45-49, 14.8% Western cape women, 11% Free state, Limpopo, Eastern cape, Northern cape, KwaZulu Natal, and Gauteng.

The association between women and provinces in South Africa 2016 showed a statistically significant ( $\chi^2 = 0.000$ ).

In Kenya 2014, 3902 total Coast women, 1664 North eastern, 5247 Eastern, 3114 Central, 9059 Rift valley, 2840 Western, 4254 Nyanza, and 999 Nairobi. 23.8% western women in the age group 15-19. Followed by 21% North eastern, Nyanza, Coast, and Eastern. 23.2% Nairobi women in the age group 20-24, 19% Rift valley, Coast, Nyanza, Western and Eastern. In the age group 25-29, 26.6% Nairobi, followed by 20% North eastern, Rift valley, Eastern, Coast, Central, Nyanza and Western. Age group 30-34, 16.7% Nairobi, Central, North eastern, Nyanza and Eastern. 13% Central women, Coast, North eastern, Western, Nyanza, Eastern, Rift valley and Nairobi in the age group 35-39, 12% Central women in the age group 40-44, followed by 10% Eastern, Coast, North eastern, Rift valley and Western and Nyanza. Age group 45-49, 11% Central women, 8% Eastern, Western, Nyanza, Rift valley and Coast

The association in table 4.7 below between women by provinces in Kenya in 2014 showed a statistically significant ( $\chi^2 = 0.000$ ).

**Table 4.7:** Percentage distribution of women by province (region) in South Africa and Kenya.

**South Africa 2016**

Age group	WC	EC	NC	FS	KZN	NW	GT	MP	LP
15-19	16.2	19.4	17.7	16.3	20.0	15.4	12.6	18.3	20.3
20-24	13.9	17.3	13.8	17.2	19.1	13.8	17.5	16.9	16.6
25-29	13.7	14.1	15.6	16.3	15.9	18.5	18.7	20.3	14.3
30-34	15.5	14.4	14.2	15.2	16.0	15.3	15.9	15.9	14.2
35-39	14.6	11.4	15.2	11.5	10.1	13.2	14.3	10.1	11.7
40-44	11.3	12.0	13.0	11.6	9.7	14.3	12.3	8.3	11.2
45-49	14.8	11.3	10.6	11.9	9.2	9.5	8.8	10.2	11.8
	$\chi^2 = 0.00$								
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>656</b>	<b>1041</b>	<b>718</b>	<b>854</b>	<b>1360</b>	<b>863</b>	<b>863</b>	<b>1054</b>	<b>1105</b>

**Kenya 2014**

Age group	Coast	North eastern	Eastern	Central	Rift Valley	Western	Nyanza	Nairobi
15-19	20.7	21.5	19.7	15.5	18.7	23.8	21.2	12.5
20-24	17.6	15.6	15.9	14.0	19.2	16.6	17.5	23.2
25-29	18.4	20.7	18.7	17.9	20.0	17.4	17.9	26.6
30-34	13.5	15.5	14.8	15.8	13.8	12.4	14.8	16.7
35-39	13.5	12.9	12.2	13.9	11.9	12.4	12.2	10.5
40-44	9.5	9.4	10.1	12.0	9.4	9.0	8.9	6.5
45-49	6.9	4.5	8.6	11.0	6.9	8.4	7.4	3.9
	$\chi^2 = 0.00$							
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>3902</b>	<b>1664</b>	<b>5247</b>	<b>3114</b>	<b>9059</b>	<b>2840</b>	<b>4254</b>	<b>999</b>

#### **4.2.8 PERCENTAGE DISTRIBUTION OF KNOWLEDGE OF ANY CONTRACEPTIVE METHODS AMONG WOMEN IN SOUTH AFRICA AND KENYA.**

Figure 4.10 shows the trend in knowledge of any contraceptive methods in South Africa in the year 2016. Women with no knowledge of any method declined from 55.9% in the age 15-19 to 11.8% in the age group 20-24 and 0% in the age group 25-29. From age 30-34, 35-39, 40-44 and 45-49 women with no knowledge increased marginally.

Women who are knowledgeable about the modern method followed a steady rate. 17.5% in the age group 15-19, 16.6% in the age group 20-24, 16.5% in the age group 25-29 and 15.2% in the age group 30-34. From age 35-39, 40-44 and 45-49 there was a minor decline respectively. The younger age group shows greater knowledge of modern contraceptives than the older age group in South Africa.

Association between women by knowledge of any method in South Africa 2016 showed a Chi-squared test of  $p < .001$

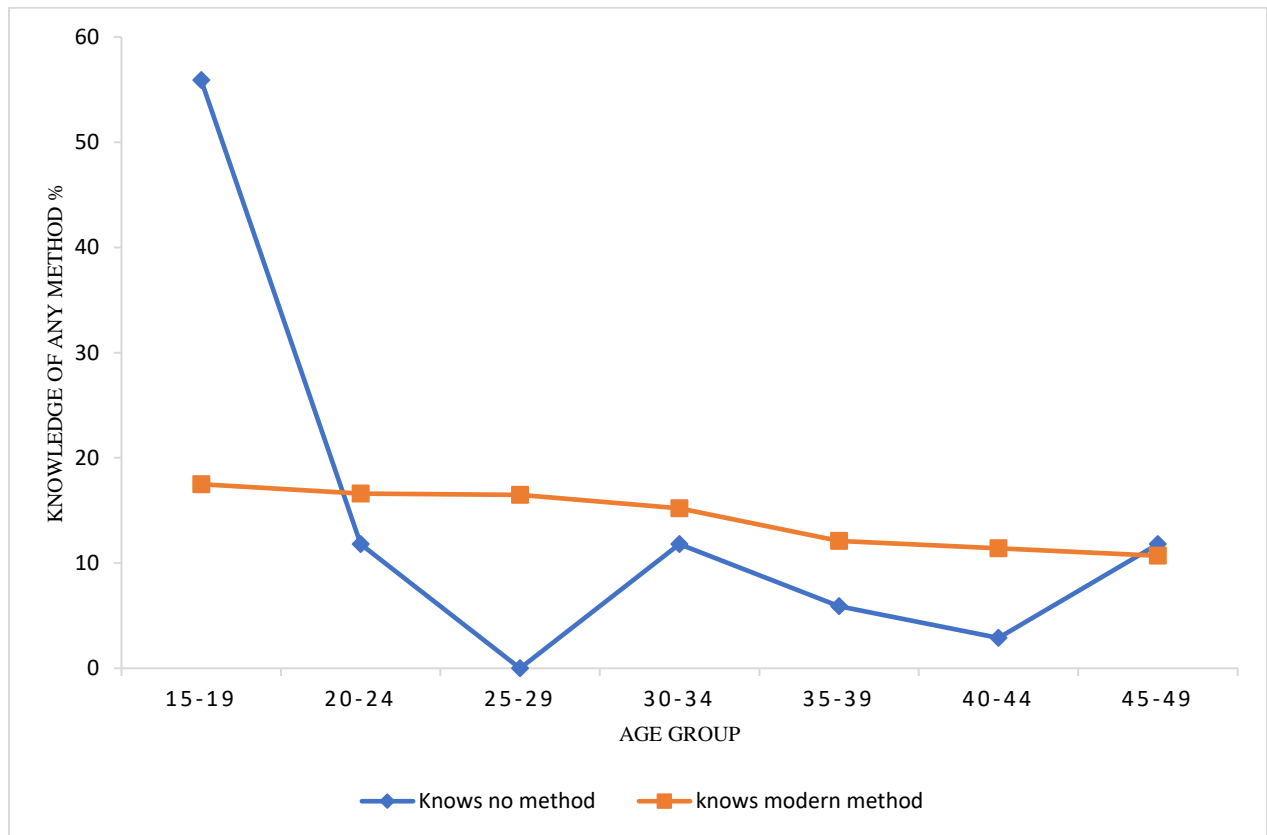
Reproductive aged women (15-49) in Kenya in the year 2014. The knowledge of folkloric methods has increased among women from 0% in the age group 15-24, to 40% in the age group 35-39. Afterwards from the age group 40-49, knowledge about folkloric method decreased speedily to 0%. 35% of the youngest age group 15-19 had no knowledge of any contraceptive, followed by the age group 20-24 with 14% and age group 25-29 with 19% and decreased down the line to the last age group 45-49.

Age group 25-29, 30-34 and 35-39 showed greater knowledge of folkloric method, followed by traditional methods and modern methods compared to other age groups. Age group 20-24 and 45-49 showed greater knowledge of traditional method and folkloric method. No knowledge is also highest in the age group 15-19 Kenya.

Association between women by knowledge of any method in Kenya 2014 showed a Chi-squared test of  $p < .001$

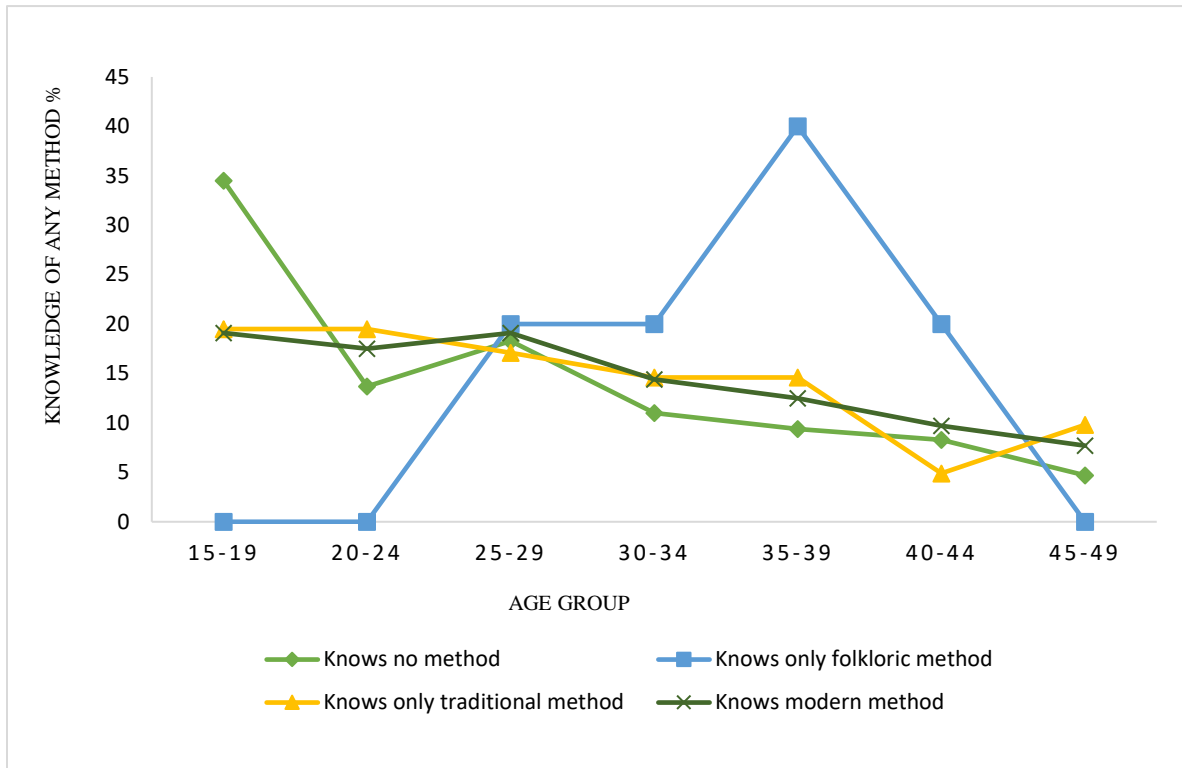


**Figure 4.10: Percentage distribution of women by knowledge of any method in South Africa 2016.**



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**Figure 4.11: Percentage distribution of women by knowledge of any method in Kenya 2014**



#### 4.2.9 PERCENTAGE DISTRIBUTION OF WOMEN BY CURRENT USE OF METHOD TYPE IN SOUTH AFRICA AND KENYA.

Figure 4.12 shows the percentage distribution of current contraceptive use by methods in South Africa. 25.2% did not use any form of contraceptives, 9.3% used modern methods and 4.8% used traditional methods in the age group 15-19. 19.3% of women used the modern method, 19% used traditional methods and 14% did not use any form of contraceptives in the age group 20-24. In the age group 25-29, 28.6% of women used traditional methods, 20.7% used modern methods and 12.6% did not use any form of contraceptives. In the age group 30-34, 19% of women used the traditional method, followed by 18.2% of women used the modern method and 12.5% did not use any form of contraceptive. 14.3% of women used the traditional method, 14.1% used the modern method and 10.4% did not use any form of contraceptives in the age group 35-39. Age group 40-44, 11.6% of women did not use any form of contraceptive, followed by 11% used the modern method and 4.8% used traditional methods. 13.6% of women did not use any form of

contraceptive, 9.5% used the traditional method, and 7.5% used modern methods in the age group 45-49.

The association between women and current use by method type in South Africa 2016 showed a statistically significant ( $\chi^2 < .001$ ).

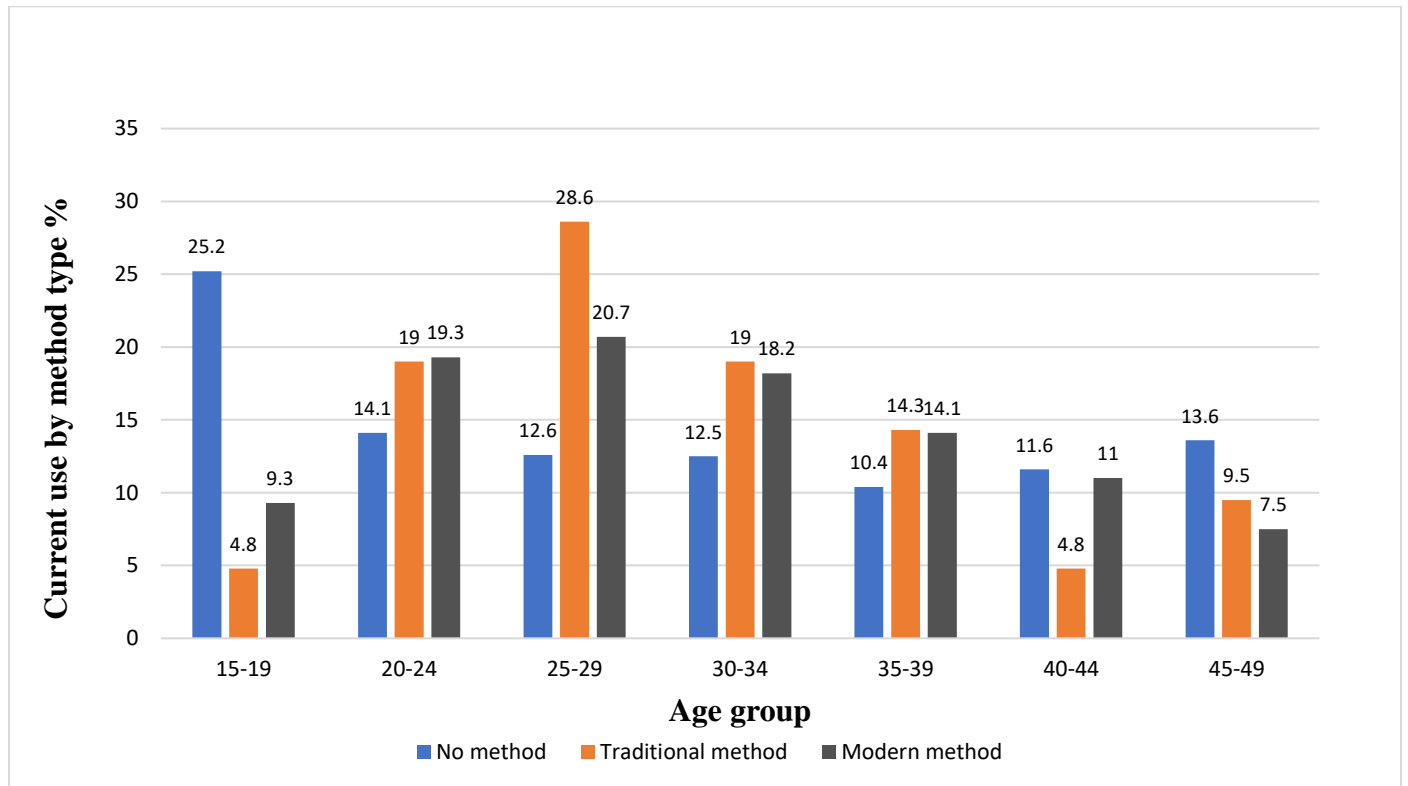
In Kenya (figure 4.13), the current use of contraceptives by method type among women. 29.2% of women did not use any form of contraceptive, 4.7% used traditional methods, and 4.3 used modern methods in the age group 15-19. 17.6% of women did not use any form of contraceptive, approximately 17% of women used the modern method and traditional method, 9.8% used the folkloric method in the age group 20-24. In the age group 25-29, 25.2% of women used the modern method, followed by 17% each used traditional methods, folkloric methods, and no method. In the age group 30-34, 21.6% of women used the folkloric method, 20% used the modern method, 14.7% used the traditional method, and 11% of women did not use any method. 18.6% of women used the traditional method, 16% used the modern method, 11.8% use the folkloric method and 10% did not use any method in the age group 35-39. 21.6% of women used the folkloric method, 14.6% women used the traditional method, 11% used the modern method and 8.5% did not use any method in the age group 40-44. In the age group 45-49, 17.6% of women used the folkloric method, 13% used the traditional method, 8% did not use any method, and 6.2 used modern methods.

The association between women and current use by method type in Kenya 2014 showed a statistically significant ( $\chi^2 = 0.000$ ).

Generally, in South Africa, the percentage of women 15-49 that do not use any method decreased across all age groups (15-39) except for the older age group 40-44 and 45-49. From the age group 15-29, the percentage of women that used modern methods increased and from the age group, 30-49 women that used modern methods decreased consistently. Age group 25-29 have the highest average of women that used traditional methods in South Africa women.

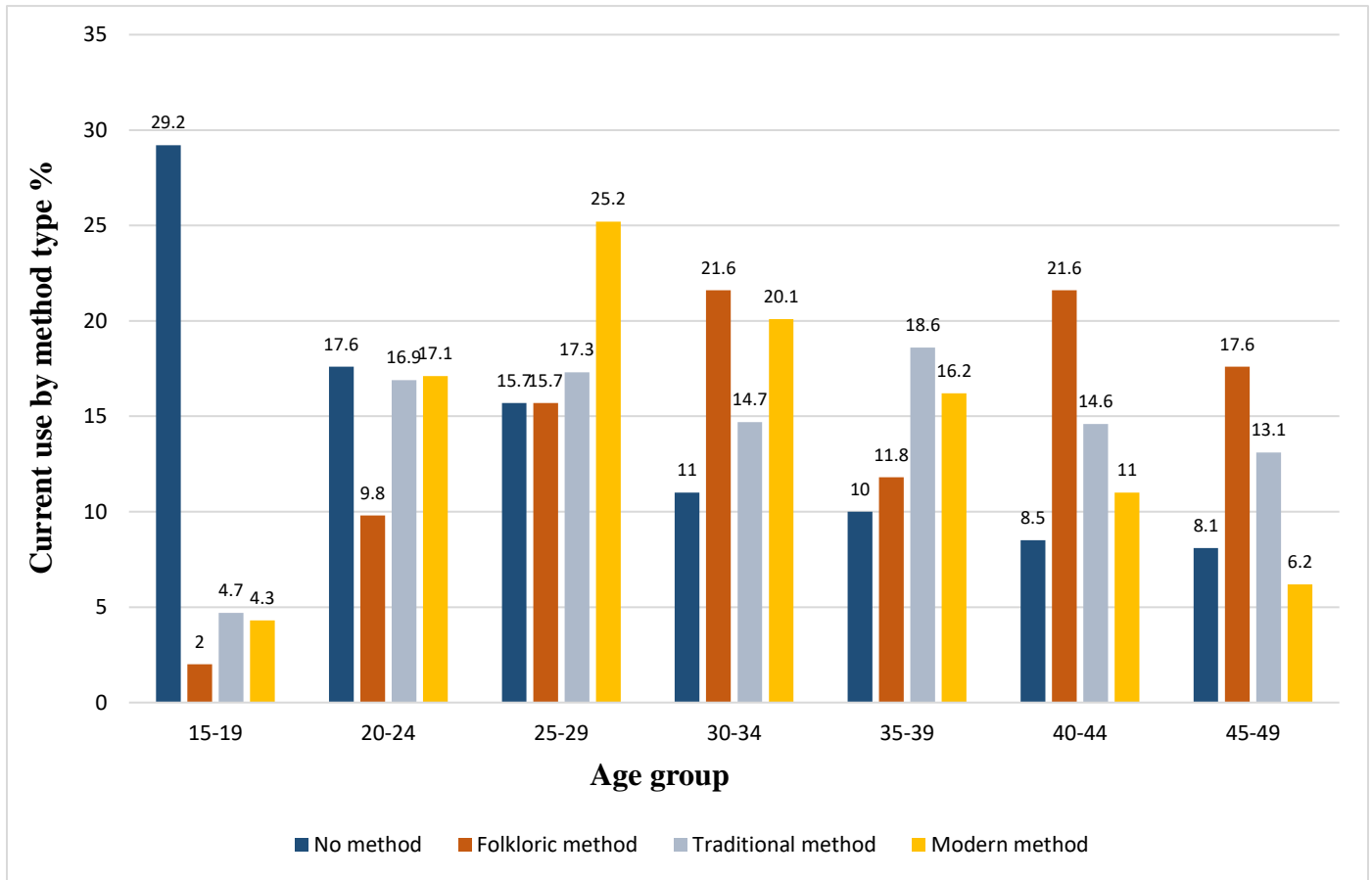
In Kenya, the proportion of women that did not use any methods, decreased consistently across all age groups 15-49, which implies that women are aware and knowledgeable about contraceptives. Modern methods, traditional methods, and folkloric methods. The age group 25-29 has the highest average 25% of women that used modern methods.

**Figure 4.12: Percentage distribution of women by current use by method type in South Africa 2016.**



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**Figure 4.13: Percentage distribution of women by current use by method type in Kenya 2014.**



**4.2.10 PERCENTAGE DISTRIBUTION OF WOMEN BY UNMET NEEDS FOR CONTRACEPTION IN SOUTH AFRICA 2016 AND KENYA 2014.**

Unmet need from contraception in South Africa (table 4.10), 940 total women never had sex, followed by 503 unmet needs for spacing, 505 unmet needs for limiting, 1680 using for spacing, 2345 using for limiting, 571 women no unmet need, 1086 not married and had no sex in the last 30 days and 884 infecund/ menopausal. Age group 15-19, 82.6% women never had sex, 17% unmet need for spacing, 16% used for spacing, 14% not married and infecund/menopausal, unmet need for limiting, using for limiting, no unmet need have 7.8%, 5.7%, 4%, and 3% respectively. Age group 20-24, 32% unmet need for spacing, 29.7% used for spacing, 18% not married and no sex in the last 30 days, 14.7% no unmet need, never had sex and using for limiting have 12%

respectively. Age group 30-34, 25.7% no unmet need, unmet need for limiting and using for limiting have 19% respectively followed by an unmet need for spacing and using for spacing with 17%, women not married and had no sex in the last 30 days have 12%. Age group 35-39, 18.6% using for limiting, followed by no unmet need and unmet need for limiting have 17%. Women not married and had no sex in the last 30 days and infecund/menopausal women have 12.5% and 11.3% respectively. In the age group 40-44, 22.9% infecund/menopausal women, 19.8% unmet need for limiting. Using for limiting, not married and had no sex in the last 30 days have 16.7% and 14% respectively. 39.8% infecund/menopausal women in the age group 45-49, 16% unmet for limiting. Women not married and had no sex in the last 30 days and women using for limiting have 13% and 12% respectively.

The association between women and unmet needs for contraception in South Africa 2016 showed a statistically significant ( $\chi^2= 0.000$ ).

In Kenya (table 4.10), 81.9% never had sex, 21.8% were not married and had no sex in the last 30 days, 19.8% infecund/menopausal and 15.9% unmet needs in the age group 15-19. 30.8% using for spacing, 28% unmet need for spacing, 24.6% no unmet need, 22.6% not married and no sex in the last 30 days, and 13.4% never had sex in the age group 20-24. 34.5% using for spacing 29.4% no unmet need, 26.5% unmet for spacing. Using for limiting and not married/ no sex in last 30 days had an average of 17% and 15.5% respectively and 12.7% unmet need for limiting in the age group 25-29. Age group 30-34, 22% using for limiting. Unmet need for limiting, no unmet need, using for spacing, unmet need for spacing had an average of 18%, 17.8%, 16.9%, and 15% respectively and 11% women not married/had no sex in the last 30 days. Age group 35-39, 26% unmet need for limiting, 23.9% using for limiting. No unmet need, infecund/menopausal, not married/no sex in the last 30 days and unmet need for spacing had an average of 12.9%, 12%, 10.7%, and 9.6% respectively. 23% unmet need for limiting, 18% used for limiting, 16.9% infecund/menopausal, and 11% not married/had no sex in the last 30 days in the age group 40-44. Age group 45-49 36.2% infecund/ menopausal women, 14.8% unmet need for limiting, 12.5% using for limiting.

The association between women and unmet needs for contraception in Kenya showed a statistically significant ( $\chi^2= 0.000$ ).

Collectively in South Africa, unmet need for spacing is the highest in the age group 20-24. From the age group 25-29 and 30-34, the highest average are women with no unmet need for contraception. And from the age group 40-44 and 45-49 the highest average are infecund/menopausal women.

In Kenya, in the age group 20-24, 25-29 and 30-34 the highest average is women using for spacing and using for limiting. From the age group 35-39 and 40-44 had the highest percentage of women with unmet need for limiting, using for limiting and infecund/menopausal. Age group 45-49 had the highest average of infecund/menopausal women.

**Table 4.10:** Percentage distribution of women by unmet needs for contraception in South Africa 2016 and Kenya 2014.

<b>South Africa 2016</b>								
Age group	Never had sex	Unmet need for spacing	Unmet need for limiting	Using for spacing	Using for limiting	No unmet need	Not married and no sex in last 30 days	Infecund, menopausal
15-19	82.6	17.1	5.7	16.3	4.2	3.2	14.3	7.8
20-24	12.4	32.2	9.5	29.7	11.8	14.7	18.6	2.3
25-29	2.3	21.3	12.1	25.4	17.3	26.8	15.4	6.1
30-34	1.2	17.1	19.8	17.0	19.1	25.7	12.0	9.8
35-39	0.4	8.0	17.0	7.9	18.6	17.3	12.5	11.3
40-44	0.5	3.0	19.8	3.1	16.7	8.2	14.0	22.9
45-49	0.5	1.4	16.0	0.7	12.3	4.0	13.3	39.8
$\chi^2 = 0.00$								
<b>Total women</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
	<b>940</b>	<b>503</b>	<b>505</b>	<b>1680</b>	<b>2345</b>	<b>571</b>	<b>1086</b>	<b>884</b>

### Kenya 2014

Age group	Never had sex	Unmet need for spacing	Unmet need for limiting	Using for spacing	Using for limiting	No unmet need	Not married and no sex in last 30 days	Infecund, menopausal
15-19	81.9	15.9	0.6	8.3	0.6	9.0	21.8	19.8
20-24	13.4	28.0	4.7	30.8	5.6	24.6	22.6	2.8
25-29	3.0	26.5	12.7	34.5	17.3	29.4	15.5	6.2
30-34	0.8	15.0	18.0	16.9	22.0	17.8	11.0	6.0
35-39	0.4	9.6	26.2	7.1	23.9	12.9	10.7	12.1
40-44	0.4	3.6	23.1	2.1	18.2	4.7	11.0	16.9
45-49	0.1	1.4	14.8	0.4	12.5	1.5	7.3	36.2
$\chi^2 = 0.00$								
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>1997</b>	<b>1223</b>	<b>852</b>	<b>2563</b>	<b>3202</b>	<b>1967</b>	<b>1777</b>	<b>1147</b>

#### 4.2.11 PERCENTAGE DISTRIBUTION OF TOTAL CHILDREN BORN BY FERTILITY PREFERENCE IN SOUTH AFRICA 2016 AND KENYA 2014.

Fertility preference and total children ever born in South Africa. Table 4.11 below, 3489 total children from women who desire to have more children, followed by 668 children from women that are unsure/undecided about their decision for more children, 3898 children from women that do not want more children, 317 children from women that are sterilized or have sterilized partners, and 412 children from infecund women. 50% women with no children are undecided, followed by 47% women want more children, 33.8% women are infecund and 9.3% women want more children. The highest average 31.6% of women with one child, desire more children, infecund women and undecided women with 23% and 19% women do not want more children. 31% of women with two children do not want more children, 22.4% women are sterilized or have sterilized partners, 19% women are infecund, undecided women, and women who want more children have 16%. 38.8% of women with three children are sterilized or have sterilized partners, 21% of women do not want more children, 14.8% women are infecund, 63% women are undecided and 4.8% of



women want more children. 21% of women with four children are sterilized or have sterilized partner, 10.7% of women do not want more children, infecund women and undecided women have 2.8%. 7.3% of women with five children are sterilized or have their partners sterilized, 5.3% of women do not want more children, 2.8% are infecund women, and 1.2% are undecided women. 2.5% of women with six children are sterilized or have their partner sterilized, followed by women who do not want more children and infecund women have 2.3% and 2.1% respectively. 1.9% of women with seven children are sterilized or have their partner sterilized and 0.9% of women do not want children in South Africa 2016.

The association between total children ever born and fertility preference in South Africa 2016 showed a statistically significant ( $\chi^2= 0.000$ ).

In Kenya 2014 (table 4.12). 7955 total children from women who want more children, 749 children from undecided women, 5509 children from women who do not want more children and 330 children from sterilized women or sterilized partners, and 154 children from infecund women. 41.1% of women with no child wants more children 36.3% of women are undecided, 22.9% women are infecund, 21.4% of women with one child wants another child, 11% infecund women, 8.8% undecided women and 5.5% of women do not want more children. 15.7% of women with two children want another child, 15.7% of women do not want more children, 11.9% are undecided women, and 8.5% infecund women. 19.3% of women with three children do not want more children, 16% of sterilized women or sterilized partners, 12.4% of women are infecund, 10.5% of women are undecided and 9% of women wants another child. 19% of sterilized women with four children, 17.6% of women do not want more children, 10.3% of women are undecided, 9.2% of infecund women and 5.3% women want another child. 18.8% of sterilized women with five children, 13% of women do not want more children, 12.4% infecund women, 6.5% undecided women, and 2.7% of women want another child. 13% of women with six children are sterilized or have their partners sterilized, or have sterilized partners, 9.6% of women do not want more children, 8.5% of infecund women, 5.7% are undecided women, and 1.9% of women want another child. 11.5% of women with seven children are sterilized or have sterilized partners 7.4% of women do not want more children, 4.7% of undecided women, 3.3% of infecund women, and 1.1% of women want another child. 8.8% of women with eight children are sterilized or have sterilized partners, 5.9% of women are declared infecund. 4.8% of women want another child and

2% are undecided women, sterilized women with nine children and infecund women have 3.9 respectively, 2.6% of women do not want more children and 1.5% of women are undecided. 3.3% of women with ten children are sterilized or have sterilized partners, 1.5% women want no more children, infecund women, and undecided women have 1.3% and 1.1% respectively. 2% of women with eleven children are sterilized or have sterilized partners, 0.9% of women do not want more children, 0.7% infecund women, and 0.5% undecided women in Kenya 2014.

The association between total children ever born and fertility preference in Kenya 2014 showed a statistically significant ( $\chi^2 = 0.000$ ).

Collectively, in South Africa, 50% of women with no child are unsure/undecided about their decision for fertility. 31.6% of women with one child want another child and 31% of women with two children do not want more children. Women with 3 children and above are sterilized women or have sterilized partners. In Kenya, the percentage of women without a child, women with one child, and women with two children want to have another child. 19.3% of women with three children do not want more children. Women with four children and above are sterilized or have sterilized partners in Kenya. This shows that the desire for more children is higher in Kenya than in South Africa.

**Table 4.11:** Percentage distribution of total children born by fertility preference in South Africa 2016.

<b>South Africa 2016</b>					
Total children ever born	Have Another	Undecided	No more	Sterilized (respondent or partner)	Declared infecund
0	47.1	50.0	9.3	0.6	33.8
1	31.6	22.6	18.7	3.8	23.2
2	15.0	16.3	31.1	22.4	19.0
3	4.8	6.3	21.0	38.8	14.8
4	1.1	2.7	10.7	21.1	2.8
5	0.3	1.2	5.3	7.3	2.8
6	0.1	0.4	2.3	2.5	2.1
7	0.0	0.4	0.9	1.9	0.0
8	0.0	0.0	0.4	0.9	0.0
9	0.0	0.0	0.2	0.3	0.0
10	0.0	0.0	0.0	0.0	0.7
11	0.0	0.0	0.0	0.3	0.0
12	0.0	0.0	0.0	0.0	0.7
			$\chi^2 = 0.00$		
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total children</b>	<b>3489</b>	<b>668</b>	<b>3898</b>	<b>317</b>	<b>142</b>

**Kenya 2014**

Total children ever born	Have Another	Undecided	No more	Sterilized (respondent or partner)	Declared infecund
0	41.4	36.3	1.4	0.0	22.9
1	21.4	8.8	5.5	0.3	11.1
2	15.7	11.9	15.7	2.7	8.5
3	9.1	10.5	19.3	16.1	12.4
4	5.3	10.3	17.6	19.1	9.2
5	2.7	6.5	13.1	18.8	12.4
6	1.9	5.7	9.6	13.0	8.5
7	1.1	4.7	7.4	11.5	3.3
8	0.8	2.1	4.8	8.8	5.9
9	0.3	1.5	2.6	3.9	3.9
10	0.1	1.1	1.5	3.3	1.3
11	0.1	0.5	0.9	2.1	0.7
12	0.1	0.0	0.4	0.3	0.0
13	0.0	0.0	0.2	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0
			$\chi^2 = 0.00$		
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total children</b>	<b>7955</b>	<b>749</b>	<b>5509</b>	<b>330</b>	<b>153</b>

#### **4.2.12 PERCENTAGE DISTRIBUTION OF WOMEN BY CURRENTLY WORKING IN SOUTH AFRICA 2016 AND KENYA 2014.**

Percentage distribution of women by currently working in South Africa (table 4.13), Age group 15-19, 25.5% of women are not working and 1.2% women are working. Age group 20-24, 20.0% of women are working and 8.7% of women are not working. From the age group 25-29, 30-34, 35-39, 40-44, and 45-49, the percentage of women working is higher than the percentage of women not working.

The association between women by currently working in South Africa 2016 showed a statistically significant ( $\chi^2= 0.000$ ).

In Kenya, 37.9% of women are not working and 5.7% of women are working in the age group 15-19. 20.2% of women are working and 15% of women are not working in the age group 20-24. The proportion of women working begins to increase from the age group 25-29, 30-34, 35-39, 40-44 and the last age group 45-49.

The association between women by currently working in Kenya in 2014 showed a statistically significant ( $\chi^2= 0.000$ ).

Put together in South Africa and Kenya, women become economically active from the age of 25-49. In the age group 15-19 and 20-24, women are not economically active. This reveals that the women in the younger age group focus on their education. Making education a priority.

**Table 4.13:** Percentage distribution of women by currently working in South Africa 2016 and Kenya 2014.

Age group	South Africa 2016		Kenya 2014	
	No	Yes	No	Yes
15-19	25.5	1.2	37.9	5.7
20-24	20.2	8.7	20.2	15.0
25-29	15.8	17.7	15.6	22.3
30-34	12.7	20.4	9.5	17.8
35-39	9.4	17.8	7.9	16.3
40-44	8.5	17.3	4.7	12.7
45-49	7.9	16.8	4.2	10.2
	$\chi^2 = 0.00$		$\chi^2 = 0.00$	
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total women</b>	<b>5774</b>	<b>2740</b>	<b>6273</b>	<b>8451</b>

### 4.3 Chapter Summary

Univariate analysis showing the frequencies and percentages of total women in South Africa and Kenya, total children ever born in South Africa and Kenya, percentage of female ever given birth, trend of total fertility rate in South Africa from 1989-2016, trend of total fertility rate from 1989-2014.

Bivariate analysis (cross tabulations) of variables and association between all variables. Chi-square test was conducted, results show statistical relationship between all variables: women by place of residence, women by educational attainment, women by ethnic group, women by current marital status, women by province, women by current use by method type, women by unmet need for contraception, total children ever born by fertility preference and women by currently working in South Africa and Kenya.

## CHAPTER 5

### DISCUSSION AND CONCLUSION

#### 5. Introduction

Fertility trends and determinants among women of reproductive age (15-49) in South Africa and Kenya. The primary focus of the study was to give an insight and to shed light on fertility among reproductive-aged women. The data analysis (chapter 4) to a great extent has been able to show in details fertility trends in South Africa and Kenya respectively and to further build on the existing knowledge of fertility trends. Chapter 5 will consist of discussion, implications for future research, conclusion, and recommendations.

#### 5.1 Discussion

##### Trends in fertility rate among women of reproductive age (15-49).

Fertility is one of the main components of population growth, population change and population projections in any given country, as it contributes to size, structure, composition, more efficient and profitable planning, resource allocation of any given country. In the past decades, fertility in Sub-Saharan Africa has been above replacement levels (2.1). In recent times some African countries have been able to create some measures to curb the fertility rate. Regardless of this, South Africa and Kenya have had a good record of fertility decrease over the years. From 6.0 children per woman in the late 1960s to 3.2 children per woman in the year 1996 census data (Mostert, 1998); (A Sibanda, 1999); (Census 1970; 1996). And according to the South Africa Demographic and Health Survey report, there was a decline from 2.9 children per woman in the year 1998 to 2.6 children per woman in the year 2014. In Kenya from 8.1 children per woman in the year 1978 to 3.9 children per woman in the year 2014. (Kenya Fertility Survey 1978); (Kenya Demographic and Survey 2014). Chapter 4 (Data analysis) report on fertility trends indicates that the fertility has declined especially in Kenya 2014 and South Africa 2016.

##### 5.1.1 Age

Age can influence fertility increase among reproductive-aged women (15-49) from table 4.4 in chapter four (percentage of women ever given birth in the population). Birth order for women 15-49, the peaking of childbearing is the age group 25-29 with 1198 births, followed by 1176 births

in the age group 30-34, fertility started to decline from the age group 35-39,40-44 ad 45-49 in South Africa 2016.

Kenyan women's fertility is closely the same as the South African women. The peak of childbearing is among women in the age 25-29 ad 30-34.

Fertility decreases as women's age increase. Women advanced in age likewise their fertility rate or fecundity decreases.

In some European countries. For instance, Bulgaria and Hungary's high fertility rate is identified among the younger women. (D Philipov, 2005) analyses of fertility intentions in Bulgaria and Hungary—measured as whether to have or not to have a first or a second child and if yes, whether to have this child within the next 2 years or later—found that in both countries older women revealed a lower desire to ever have a first child as compared to younger women. However, when the timing is considered, older women who intend to ever have a first or second child were more likely to want it within the next 2 years as compared with younger women. Perhaps generally older women may desire to limit childbearing because they have already achieved their intended family size, and therefore have no need or desire for additional children. It is also possible that the decrease in their fecundity may make them less interested in wanting more children (OS Ewemooje, 2020).

### **5.1.2 Place of Residence (Urban/ Rural women)**

South African women of reproductive age 20-24, 25-29, 30-35,35-39, 40-44, and 45-49 are urban dwellers, except for the age group 15-19. The proportional difference between urban and rural dwellers is minimal across all age group. Rural women begin to migrate from the age of 20- 49 to urban areas in South Africa. This will improve the lives of women, expose women to being economically active, women get the opportunity to build themselves academically, skills acquisition, self-development, etc. South Africans are predominantly urban dwellers

Kenyan women are rural dwellers. The young age group 15-19 are mostly rural dwellers, women begin to migrate from rural areas to urban areas from the age group 20-24, 25-29, and 30-34. And from the ages of 35-39, 40-44- and 45-49-women's population increased in the rural areas of Kenya in the year 2014. Kenyan women are predominantly rural dwellers compared to South



African women who are urban dwellers, though urbanization in Kenya is setting in, especially among the young age group 20-34.

Urbanization may affect fertility in various ways, when women rapidly migrate to urban areas of a country, there must be adequate health facilities to accommodate the population. When a country fails to make plans for the health care of its population and migrants, then that can result in fertility decrease and high mortality rates, lack of proper health care in the urban areas with a large population can bring about an increase in unwanted pregnancies among women, lack of good and functioning health care in the urban and rural areas of a country will make women reluctant and neglect family planning and contraceptive use.

### **5.1.3 Education**

The proportion of women by educational attainment (table 4.2) showed that older women aged 35-39, 40-44 and 45-49 are less educated compared to the younger women in South Africa and Kenya. Women educational attainment progressed with respect to age except for the age group 35-49. Majority in the age group 15-19 had an incomplete secondary school education, followed by age group 20-24 with completed secondary school education, 25-29 with higher education and 30-34 with higher education.

The distribution shows that education is rising among the younger women in South Africa and Kenya respectively.

### **5.1.4 Fertility Preference**

The desire for more children decreased for mothers with 3 children and above in South Africa. The peak of female sterilization is among women with 3 children. The peak of infecund women are women with no child in South Africa.

Women with no child, one child, and two children, desire another child in Kenya 2014. The increase in female sterilization is seen among women with 3 children and above. Kenyan women want more children compared to the South African women.

### ❖ **Female sterilization**

Young women must be encouraged to abstain from female sterilization, studies have shown that some young women who indulge in sterilization end up not having children of their own in the future. It is therefore important to note that young women with the intention to have children in the future must either use contraceptives, condoms, or abstinence from sexual activity. Female sterilization is associated with the older age group. Women in the older age group have achieved their desired number of children (fertility intentions).

## **5.2 Implications for future research**

### **Condoms**

The use of condoms must be practiced among the younger age group. Condoms can help reduce the unwanted pregnancies, early childbearing, early marriage, infant mortality rate, poor health conditions for young women, educated women in the society, etc. This will allow young women ample time to complete their education, develop themselves, work and become independent. Table 4.5 (women by marital status in South Africa 2016 and Kenya 2014) reveals there's being a good development in the age at marriage (age at marriage has increased). Child marriage as declined.

Young women (15-19) must be encouraged, to at least complete high school without having to drop out of high school due to unwanted pregnancies.

### **5.2.2 Dangers in teenage pregnancies**

Teenage pregnancies are associated with lots of health challenges

- ❖ Teenagers are still too young to carry pregnancies, their reproductive system is not fully mature for this process (motherhood).
- ❖ Teenage pregnancies can increase infant mortality rate and maternal mortality rate.
- ❖ Teenage pregnancies would increase the rate of young women with incomplete primary school or incomplete secondary school education.
- ❖ Teenage pregnancies expose women to contraceptive use and abortion instead of total sexual abstinence.
- ❖ Teenage pregnancies expose young women to different kinds of infection and complications during and after pregnancies.

### 5.2.3 Availability of contraceptives

Contraceptives use either to space births, limit births or stop births completely, affect a society's fertility level. Contraceptives can be used as a measure to reduce the fertility rate if religiously taken by women of reproductive age (15-49). Figures 4.10 and 4.11 in chapter 4 (current use by method type in South Africa and Kenya). It revealed that women in South Africa 2016 and Kenya 2014 still comfortably use the traditional way of not falling pregnant. Contraceptive use appears to be more and more necessary to approach the fertility decline in Africa (N Stiegler, 2016). The beginning of the decline of fertility, even if largely attributable to first marrying at a later age, cannot be mentioned without reference to contraception which has slowly entered African custom (N Stiegler, 2016).

#### **Some reasons why women still prefer the traditional methods/not using any methods**

- ❖ Women still prefer the Traditional methods/ Folkloric methods, perhaps due to the side effects (unfriendly reaction) of some modern contraceptives on women.

Recent studies have looked into the reasons why women or couples shy away from more effective modern methods of contraception (S Abejo, 2003); (LM Williamson, 2009) (GT Cruz, 2016). The most common reasons are fear of side effects, lack of knowledge of different methods, and inconvenience of use, in contrast to the relative ease in adopting traditional contraceptive method. A study of urban poor women in Manila found that traditional contraceptive methods, particularly withdrawal, are preferred because of their absence of side effects, safety, agreeability with partner, and ease of use (GT Cruz, 2016).

- ❖ Access to clinics or health centers for the administration of contraceptives. For example, the distance from your residence (house) to the health center.

The inadequacies in educational structures increase difficulties in accessing contraceptive information (AS Susuman 2009). As a consequence, there is a great necessity for additional efforts and means of communication related to this matter (N Stiegler, 2016).

Lack of educational structures, there is an inadequacy of healthcare structures in many African countries. They are not only limited, but the population has restricted access to them (N Stiegler, 2016). The rural population is generally scattered in huge geographical areas with sometimes a single inadequate and poorly equipped health center (M Sharan, 2002); (Podhisita, 1998).

- ❖ Some women are postpartum amenorrhoeic (menstrual cycle has not resumed since the birth of their babies), postpartum abstaining (mother have not resumed sexual activity since the birth of their babies)
- ❖ Not using any method (no contraceptive use) could be associated with some religious and cultural belief
- ❖ Some women do not use any form of contraceptives in South Africa, especially in the young age group. 15-19, since the majority of these women in that age group, are not as sexually active as the other age group 20-39. From the age group, 40-49 women do not use any form of contraceptive, in view of the fact that the older a woman gets the less sexually active she becomes.

Kenya is the opposite of South Africa, the population of women not using any methods of contraceptive is in the age group 15-19 and 20-24. The older age groups 40-44 and 45-49 still make use of contraceptives (folkloric methods, traditional methods, and modern methods). This pattern is evident at every age group from 25-49.

The fact that more women use contraceptive in Kenya than in South Africa. Kenyan women are sexually active irrespective of their age.

### **5.3 Recommendations**

- ❖ Contraceptives is a tool that can aid couples or individual women to achieve their desired or ideal number of children. Women A lot still needs to be done on how to encourage women to go for the scientific way of contraceptives
- ❖ Home deliveries of contraceptives should be administered in the Sub-Sahara Africa countries. South Africa and Kenya government must implement policies to help make contraceptive reachable to women of reproductive age 15-49 irrespective of their place of residence and status in the society.

Door-to-door delivery of contraceptives in Bangladesh, have helped poor and less-educated women throughout the world use contraception and thus have fewer children (Carr, 2000). Home delivery of contraceptive will help a society in case of a pandemic, lockdown, natural disaster, war etc.

- ❖ Women who react badly (side effects) to contraceptive use must be encouraged to use condoms often or must abstain from sexual activity on their ovulation days or fertile days. To avoid unwanted pregnancies or future abortion.
- ❖ Women must be placed in a safe position where they feel comfortable to walk into a health care center and seek medical advice regarding family planning, contraceptive use, menstrual cycle, ovulation, etc.
- ❖ Women must have a platform where they can be equipped, become entrepreneurs, learn skills. Government must provide earning opportunities for young women who dropped out of school. This will reduce the rate of unemployed women, depressed women, and suicidal women in any society. From table 4.14 (women by currently working in South Africa 2016 and Kenya 2014) the proportion of young women 15-24 not working is on the high side.
- ❖ Age can also limit fertility/fecundity, the older a woman gets the slimmer her chances of fertility. For older women, delaying a birth usually results in a lower completed fertility because they have only a short period of fecundity remaining (WP Butz, 1979).
- ❖ Effective antenatal care, postnatal care and child health services for both mothers and babies. This can help reduce infant mortality, neonatal death, maternal
- ❖ Awareness programs, must be frequent, on televisions, radio, newspapers, social media campaigns, talk shows, circulation of pamphlets written in native languages not just English languages: This pamphlet must be seen in public place like the malls, gas stations, schools, shops, bus stops, work places etc. this will make allow people make informed choices on reproduction health issue.
- ❖ Government must invest in the teenagers and young women sexual and reproductive health. More trained and specialized health worker are needed in the health care sectors to promote sexual and reproductive health.

## 5.4 Conclusion

This study shed light on the trends and determinants of fertility in women (15-49) in South Africa and Kenya, trend of knowledge of modern contraceptive in South Africa is very stable and consistent over time. While Kenyan women are much knowledgeable with the folkloric method, traditional method and modern method. The study also provides some important indications that fertility in South Africa and Kenya has been declining consistency.

Educational institutions play prominent roles in women's fertility, sexual behaviour, desired number of children etc. School attendance can protect against early marriage, health risks, unwanted pregnancies etc. Well-educated women are more likely to know and use modern contraception and to practice healthy reproductive life, birth spacing. Education depresses fertility and gives a woman more confidence of survival, strengthen her desire to have fewer births (reduced fertility), delayed childbearing, increased use of contraceptive. Table 4.2 (women by educational attainment): The distribution showed that education is rising among the younger women. Women in the younger age group are more educated than the women in the older age group.

Age at marriage has increased among women of reproduction age (15-49) in South Africa and Kenya, the rate of child marriage has declined. Table 4.5: the initiation of marriage started at a later age from 35 years in South Africa and 25 years in Kenya respectively.

Desire for more children is higher in Kenya than in South Africa (Table 4: 11). Women become economically active from the age group 25 down to age 49 in South Africa and Kenya (Table 4:13).

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