Determinants of Women's Modern Contraceptive Use in Nigeria.

ABSTRACT

The study investigated the influence of various socio demographic factors and family planning policies on the use of modern contraceptive amongst married women within the age range of 15 – 49 years in Nigeria. This is in a bid to improve the modern contraceptive use across the country and especially among married women, through recommendations on sexual and reproductive health policies, in relation to the result of findings. Both quantitative methods and qualitative methods were used in data analysis. Secondary data was derived and computed from the 2018 Nigerian Demographic and Health Survey (NDHS) dataset and logistic regression analysis was done to analyze data as well as test the hypothesis. R studio version 4.1.2 was used for data analysis. The results highlight the importance of considering socio-demographic factors in reproductive health interventions as well as programs aimed at increasing the uptake of modern contraceptives among married women in Nigeria.

Key words: Modern Contraceptive, Married Women, Nigeria.

INTRODUCTION

Nigeria is the most populous country in Africa with a population of over 200 million (United Nations, 2019). UN population projection estimates population to be over 260 million by 2030 and over 400 million by 2050. The population growth is explained by one of the highest fertility level among African countries. Over a period of 70 years, TFR in Nigeria decreased gradually from 6.35 in the 1950s to 5.4 in the 2010s. UN predict only the slow TFR decrease to 4.4 by the beginning of the 2030s and to 3.35 by the 2050s (https://population.un.org/wpp/DataQuery/). If left uncontrolled, Nigeria's fast rising population could pose a threat not only to the Nigerian economy but to the entire continent of Africa (Olanrewaju, 2016). Recent research based on (PMA, 2018) has revealed a low uptake of contraceptive techniques and a high level of unmet requirements in Nigeria (Alo et al., 2020).

(Alo et al., 2020) further revealed that in accordance with to the most recent National Demographic and Health Survey (DHS, 2018), only 17% of married women within the age range of 15 to 49 years old used any contraception with only 12% using modern contraceptive techniques. Age, number of children, educational level, socioeconomic status, fertility intention, cultural belief, awareness of contraceptive methods, fear of side effects, partner's disapproval, misconceptions, and myths have all been linked to low uptake of modern contraceptives in previous studies by (Ankomah et al., 2011; Dambo et al., 2017; Sharan et al., n.d.). This research will therefore be analyzing the extent to which socio-demographic characteristics affect the use of modern contraceptive in Nigeria, focusing on married women. This is because according to (Doris Dokua Sasu, 2022), there is a wider gap in modern contraceptive use among married women and unmarried women. The use of modern contraceptive among unmarried women is about 16% more than among married women. This suggests that single women are more likely than married women to take modern contraceptives, which is further supported by (Alo et al., 2020), hence this research will focus more on the married women.

According to (Monjok et al., 2010), extensive research and clinical trials have resulted in improvements to existing contraceptive methods as well as the development of new, more effective, and acceptable contraceptive methods with fewer side effects. However, Nigeria's low contraceptive use still remains and this is one of the principal reasons for of high fertility rates, notably in rural areas and the northern half of the country. Due to the country's high fertility rate, Nigeria has high rates of maternal, newborn, and neonatal mortality. The usage of contemporary contraception has been reported to be fairly limited in the northern half of the country, with only 9% of Nigerian women using it in 2003 (Monjok et al., 2010).

Despite the abundance of data and information, (Monjok et al., 2010) established that a lack of political prioritizing and commitment to safe motherhood issues is the cause of Nigeria's insufficient commitment to family planning and reproductive health issues. The political leaders seem not to regard family planning and reproductive health issue as deserving of persistent attention and support with financial, human, and technological resources to commensurate with the problem's severity.

Problem Statement.

Health policy plus's report in its fact sheet on population and development states that Nigeria's population profile as at 2017 read an estimated population of 192 million at an annual growth rate of 3.2% and an average of number of children per woman of 5.4. If population growth continues at the current pace of 3.2 percent, it will double in just over 20 years and triple in 2050, to 543 million people (Health Policy Plus, 2017). According to (Olanrewaju, 2016), the country's consistently high fertility rate is the primary reason behind its population growth rate. Despite the fact that the population of Nigeria is estimated at over 190 million and it is projected to increase by 44% between 2015 and 2030, less than one-quarter of women

within reproductive age in Nigeria uses modern contraceptive methods, its importance notwithstanding (Alo, et al., 2020).

The current contraceptive prevalence rate is estimated to be between 11 and 13 percent (Monjok et al, 2010). Despite the high prevalence of sexual activity and general understanding of various contraceptive options among Nigerians, this rate is quite low (United Nations Department of Economic and Social Affairs - UNDESA, 2020). As a result, many unwanted pregnancies and illegal abortions occur, adding to a high maternal and infant death rate which could in turn reduce the population growth rate.

In furtherance, the problem of women's modern contraceptive use in Nigeria is multifaceted and complex, however, despite efforts by the Nigerian government and various international organizations to increase access to and use of modern contraceptives, the country still has one of the lowest rates of modern contraceptive use in the world. As of 2021, only 12.7% of women in Nigeria use modern contraceptives, compared to a global average of 56.8%. This low rate of use is associated with high rates of unintended pregnancy, maternal mortality, and unsafe abortion. Barriers to modern contraceptive use in Nigeria include limited access to family planning services, lack of knowledge and awareness about modern contraceptives, cultural and religious beliefs that discourage contraceptive use, and gender-based barriers that limit women's independence and decision-making capacity. Addressing these barriers requires a multifaceted approach that includes increasing access to family planning services, improving education and awareness about modern contraceptives, addressing cultural and religious beliefs that discourage contraceptive use, and promoting gender equality and women's empowerment (Dasgupta et al., 2022).

Extant literature revealed that religious belief, low level of education among others could lower the use of modern contraceptive by women. Many studies have been conducted on the use of modern contraceptive by women in Nigeria and some countries in Africa, however, no study have examined place of residence, age of respondents, educational level, desired number of children, religion, government policies and knowledge of contraceptive on modern contraceptive use among women in Nigeria. This is the gap this study intends to fill.

Research Question

- What is the prevalence of modern contraceptive use among married women aged 15-49 years old in Nigeria?
- To what extent does socio-demographic characteristics affect the use of the use of modern contraception in Nigeria?
- What is the impact of family planning policies on modern contraceptive use in Nigeria?

Subject of Study

The subject of the study is modern contraceptive use among married women.

Object of study

The object of the study is Nigerian married women within the age range of 15-49 years old.

Aim of study

The study is aimed at investigating the extent to which various socio demographic factors and family planning policies contribute towards modern contraceptive use amongst married women in Nigeria. This is in a bid to improve the modern contraceptive use across the country and especially among married women, through recommendations on sexual and reproductive health policies, in relation to the result of findings.

Research Objectives

- To assess the prevalence of modern contraceptive use among married women aged 15-49 years old in Nigeria.
- Analyze the influence of socio-demographic characteristics on the use of the use of modern contraception in Nigeria?
- Review the Nigerian family planning policies and its impact on modern contraceptive use.
- To provide evidence-based recommendations for policymakers to improve sexual and reproductive health policies, with a focus on increasing the use of modern contraception among married women in Nigeria.

Research Hypothesis

According to reports, one of the obstacles to using family planning is religious belief (Akamike et al., 2020). (Jimoh, 2020) stated according to his research analysis that in Nigeria, there is a considerable gap in the use of modern contraception across ethnoreligious lines. For instance, Christian women in Nigeria seek and use modern contraceptives more than Muslim women, especially non-Catholic Christians. Based on this research, the following hypothesis are formulated:

- Religion influences the number of children born per woman, hence, it has a significant impact on modern contraceptive use amongst married women in Nigeria.
- Socio- demographic factors such as Age, place of residence and level of education have strong positive influence on modern contraceptive use while other socio-demographic factors as knowledge about modern contraceptive, number of living children and desired/ideal number of children have no influence on modern contraceptive use.

Relevance of The Study

This research helps to understand the extent to which socio economic factors contribute to the low use of modern contraception among married women in Nigeria. It also helps to reveal the rate at which women who do not want to have more children refrain from use of modern contraception nevertheless. Understanding this will therefore help in shaping polices which will encourage thereby increasing its use amongst these group of women in Nigeria.

1.0 LITERATURE REVIEW

Based on the promotion and celebration of high fertility rates as a means of preventing lineage extinction, (Ekane, 2013) revealed that Sub-Saharan African's social organization and cultural setting play pivotal roles in the region's high fertility rates. In comparison to other parts of the world, the region still has a long way to go in terms of fertility drop. This explains why Nigeria; a part of the sub-Saharan African country's fertility rate has been consistently high over time, and a primary reason behind her high population growth rate (Olaniyan, 2016). According to recent study, strategies that nurture the predominance of low need for children should be based on the advice for increased female education, which is thought to foster a rise in contraceptive use and control of women's fertility positions (Ekane, 2013).

Modern contraceptives have been found as an effective strategy for reducing fertility, and are thus widely advocated to help decrease population growth, especially in developing nations (Apanga, et al. 2020). Contraceptive use has been confirmed to be effective in promoting maternal and child health as well as national development through direct and indirect means. It also helps to improve national development by limiting population increase, which reduces competition for scarce resources. This is especially essential for Nigeria, which is classed as a lower middle-income country with a poverty rate of 62.6 percent of the

population (Dambo et al., 2017). Contraception plays an important role in preventing unplanned births, lowering maternal and infant mortality, and enhancing women's and families' lives. According to a new study, contraception could prevent more than two-fifths of maternal mortality (Aina & Aina-Pelemo, 2019). The advantages of contraception use extend beyond health care. Providing unrestricted access to contraception will contribute to improved female education, women's empowerment, poverty reduction, and even environmental sustainability by reducing unwanted pregnancies (Aina & Aina-Pelemo, 2019). Changes in the types of contraceptive methods used by family planning acceptors are a measure of progress in family planning adoption. Traditional approaches are more commonly used in areas where family planning acceptance is low and family planning programs are underutilized. Traditional contraception methods have a higher failure rate than modern contraception methods, and are thus not regarded an effective means of contraception (Sharan, Ahmed, May, & Soucat, 2011).

According to (WHO, 2019), Family planning allows people to have the number of children they want and to space their pregnancies out. Information, education, and the use of contraceptive methods are used to attain this goal. Modern contraceptives are generally referred to products or medical technique that prevents sexual intercourse from resulting in reproduction (Hubacher & Trussell, 2015).

(Hubacher & Trussell, 2015) proposed that modern contraceptives should be referred to as means devised to enable couples have sexual intercourse at will without a risk of getting pregnant. Modern contraceptives were classified to be completely different from traditional contraceptive methods such as abstinence and lactation amenorrhea which denotes that couples either have to avoid having sex at will or need to have a child before avoiding pregnancy.

A research by (Ankomah et al., 2011) revealed that key myths and misinformation regarding the use of modern contraception which have negative effects on contraceptive use include: "Contraception makes women promiscuous," "family planning is expensive," and "family planning causes cancer". (Gueye et al., 2015) also added that other misconceptions include: “people who use contraceptives end up with health problems,” “contraceptives are dangerous to women’s health” and “contraceptives can harm your womb.” However, that family planning methods are effective and do not contradict religious teaching are examples of factual information that has a strong positive impact on contraceptive use (Ankomah et al., 2011).

Therefore, according to (Nicola Turner, 2021), for countries to establish population policies to counteract the issues caused by overpopulation and to deal with population growth at the macro level, it is vital that they understand the interrelated elements that determine fertility and contraceptive use and how they connect to population growth (national and international levels). At a "micro" level, religion and religiosity are related to and may affect females' decisions about starting a family. African researchers have made tremendous progress in establishing how religious affiliation affects the usage of contraception. In order to improve the situation for women, several studies suggest that males and religious leaders need to be actively involved (Frank Götmark & Nicola Turner, 2022).

1.1 Fertility and Contraception Use.

As opined by (Ukoji et al., 2022), the successful use of contraceptives is one of the most tried-and-true tactics for fertility regulation, and it is more important than ever, given the present trends in global population.

Unfortunately, according to (Dasgupta et al., 2022), the highest fertility rate in the world today was recorded in sub-Saharan Africa, where birth rates dropped from 6.4 in 1990 to 4.6 in 2020. Sub-Saharan Africa had the lowest rates of contraceptive use, yet over the same time period saw an increase from 13% to 33% among married/in-union women. Sub-Saharan African nations often have greater fertility rates than other

nations do, regardless of the extent of contraception use. Contrary to what has occurred in Asia, Latin America, and the Caribbean, Middle and Western Africa have experienced changes in fertility and the use of contraception later and more slowly than Eastern and Southern Africa. The use of contraceptives was a major factor in previous fertility shifts. It is possible to better comprehend the likelihood of a drop in fertility in sub-Saharan Africa by analyzing this relationship.

Therefore, since contraceptive usage has been found to be more common, particularly among couples who desire to limit childbearing or who want to have a longer year gap between their children, the use of fertility intention in studies about contraceptives to see its influence on contraceptives use can be held as valid. Moreover, research has revealed a connection between desire for children and use of contraceptives (Adeyoju, 2013).

Utilization of contraceptives and fertility generally have an inverse relation. High contraceptive use among women is typically associated with low fertility rates in those nations. But other proximate determinants of fertility such as the efficacy of contraceptive methods used, incidence of abortion, length of postpartum insusceptibility due to breastfeeding and sexual abstinence, patterns of marriage and union formation and dissolution, levels of sexual activity, and the prevalence of infertility in the population of reproductive age as well as a multitude of different social and environmental factors also influence the relationship between contraception and fertility (Dasgupta et al., 2022).

According to a binary logistic analysis by (Odewale et al., 2016), women in Nigeria who want the same number of children as their spouse are 1.4 times more likely to use contraceptive methods than those who are unaware of their husbands' preferences, while those whose husbands want fewer children are 1.8 times more likely to use contraceptive methods than those who are unaware.

Because of the consequences for preventing unplanned pregnancies, which have been found to be significant in sub-Saharan Africa, it is crucial to comprehend the relationship between contraceptive use and fertility. It is also crucial when talking about the likelihood of future reproductive reductions. Further increases in the use of contraception by women trying to avoid conception in nations with high fertility rates will probably result in a drop in overall fertility (Dasgupta et al., 2022).

1.2 Political will towards contraceptive uptake in Nigeria.

It is commonly disputed that Nigeria doesn't have a complete law that specifically governs the sale or use of contraceptive medications and devices (Ladan 2006). Contraception distribution is permitted in Nigeria, according to the National Policy on Population, which mandates that national family planning programs should provide range of techniques of fertility regulation to ensure free and conscious choice for all couples (Aina & Aina-Palemo, 2019).

According to (Ogbaje & Igharo, 2009), Family planning and commodity security in Nigeria are affected by a multitude of initiatives, policies, and frameworks. A number of those policies, whether they are finalized or still in the draft stage, particularly mention and encourage the availability of good reproductive health care for women, men, and adolescents, as well as the ability of each of those clientele groups to make educated decisions. The National Reproductive Health and Commodity Security Strategy Plan's existence shows a pro-reproductive health care environment in terms of policy. However, since the plan was allowed to expire and is not financially self-sufficient, reproductive health and commodity security need additional care and funding. Despite the fact that the national strategic plan includes provisions for state-level action, there isn't an analogous strategy at the state level. Given Nigeria's decentralized system, where the states are basically autonomous, this is important.

There is a wealth of studies highlighting the numerous variables that contribute to the low frequency of the use of modern contraception in Nigeria, with the myth regarding the negative effects of modern

contraceptives being the most prevalent one. What Nigeria lacks, however, is the political will to offer family planning programs on a much bigger scale, utilizing community-oriented strategies and communication initiatives, in order to help dispel the myth about the negative side effects of contemporary contraceptives (Monjok et al., 2010).

According to the (FMOH, 2014), Nigeria's commitments at the 2012 London Summit on Family Planning led to the Federal Ministry of Health developing the Nigeria Family Planning Blueprint (Scale-Up Plan). The complete, five-year costed scale-up plan was created by the Federal Ministry of Health using the current plans as well as extra strategic planning. To reach the national goal of a contraceptive prevalence rate (CPR) of 36% by 2018, the Blueprint is meant to serve as a roadmap for programming, resource allocation, and commitments. However, it is evident that the plan has failed to reach its goal, as the contraceptive prevalence rate (CPR) in Nigeria as at 2022 according to (Statista, 2022) is 18 percent for all women and 21 percent for married women or women in union.

In Nigeria, both the public and private sectors (54 percent and 41 percent, respectively) offer family planning services. However, depending on the method of contraception, this role varies. In addition to long-acting reversible contraceptives such as intrauterine devices (IUDs), implants, and injectables, the public sector primarily provides female sterilization. The commercial sector, on the other hand, mainly offers male condoms, emergency contraception, and tablets.

The modern methods of contraception that are available in Nigeria include oral contraceptive pills, injectables, IUDs, implants, male and female condoms, lactational amenorrhea (LAM), and male and female sterilization. 5% or so of consumers still utilize older methods. Currently married women are most likely to utilize implants and injectable contraceptives, while sexually active unmarried women are more likely to use male condoms (Jimoh, 2020).

As stated by (Ogbaje & Igharo, 2009), since reproductive health and family planning are not top priorities in Nigeria, they frequently lack staff and resources. There is little emphasis placed on promoting family planning services, and certain goods are now distributed by NGOs. The Association of Reproductive and Family Health in the neighborhood and the Planned Parenthood Federation of Nigeria are two examples of the nation's active civil society and NGOs.

(Oluwasanu et al., 2019) opined that information on family planning should be distributed by media and other means, which is important. For instance, the Nigerian Urban Reproductive Health Initiative's impact assessment revealed that the availability of family planning through numerous channels (radio, television, and community events) greatly increased the usage of MCs.

As a result, women in rural areas have less access to modern contraceptives than do women in metropolitan areas, where family planning programs and interventions are more prevalent. Reaching modern contraceptives in Nigeria's most rural and isolated areas is not only prohibitively expensive, but there are also few options available. Long-acting reversible contraceptives (LARCs), permanent methods, and short-term and emergency contraception can be quite difficult for users to get due to their rarity. For some other regions, a product might only be accessible after undergoing a difficult procedure at a government healthcare center (Jimoh, 2020).

1.3 Modern contraceptive use and the Sustainable Development Goals (SDGs).

For women, families, communities, and nations, voluntary family planning has a transformative impact. Family planning upholds everyone's access to reliable, unbiased information about contraceptive techniques that might help them accomplish their reproductive goals, thereby advancing human rights. The five pillars of Sustainable Development Goals—People, Earth, Prosperity, Peace, and Partnership—can all be achieved more quickly by investing in family planning (Starbird et al., 2016).

Both Goal 5 on gender equality and women's empowerment and Goal 3 on health in the SDGs specifically include family planning. This does not necessarily imply that only these goals have a direct bearing on family planning. Most goals are related to family planning. Without guaranteeing that every woman has access to high-quality, rights-based family planning services, it would be impossible to reduce poverty and hunger (goals 1 and 2), guarantee quality education for everyone (goal 4), and promote sustained economic growth (goal 8) (Dockalova et al., 2016).

Women and their partners are better equipped to acquiesce in their rights to make an informed, responsible decision about the number and elongating the year gap of their children when they have access to and use an effective method of contraception. Hence, Sustainable Development Goal (SDG) indicator 3.7.1, "Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods" enriches the global review of SDG target 3.7. "By 2030, ensuring that all people have access to family planning, sexual and reproductive health services, information, and education, and that reproductive health is incorporated into national plans and programs."(United Nation's Population Division, n.d.).

Increased investments and commitments from governments and international organizations are required to help realize everyone's right to an adequate standard of living and to help the 2030 Agenda for Sustainable Development fulfill its promise that "no one will be left behind," according to trends in the prevalence of contraception and the need for family planning met by modern methods (UNDESA, 2019).

In addition to health and human rights, empowering women to make decisions about the number, timing, and year gap of their pregnancies has an impact on numerous multisectoral variables essential to sustainable development, including women's education and social standing. Without access to family planning services and reproductive health care, other measures will have a lower impact, be less successful, cost more money, and take longer to implement (Starbird et al., 2016).

1.4 Factors Affecting Modern Contraceptive use in Nigeria

A context exists in every nation, including Nigeria, that affects the chance of reproductive health commodity security. Family planning, reproductive health, and particularly the availability of contraceptive supplies is impacted by national laws and regulations. Other, more significant factors that affect the availability of reproductive health services and supplies include social and economic conditions, political and religious concerns, and competition for resources. (Ogbaje & Igharo, 2009).

Studies have demonstrated that household decisions, whether they are made jointly or solely by the husband or wife, have an impact on a woman's decision to use contraception (Odewale et al., 2016).

A large family is still the norm for most Nigerians, according to the 2003 demographic health survey; more than two-thirds of women believe having five or more children is ideal, but men prefer two more children on average than women do (Ogbaje & Igharo, 2009). Studies have demonstrated that an African man has a higher desire for a large family size than their female counterpart, leaving women out of the decision about how many children they will have, and leaving the decision to utilize contraception entirely up to the man. The number of children a husband wants will always influence how many children his wife bears and, consequently, how many contraceptives she uses. Because men are considered to be the family's head in Nigeria, wives always acknowledge her husband's desires. When her husband desires additional children, she will be less likely to utilize contraception (Odewale et al., 2016).

In Nigeria, decisions about family planning are made differently by husbands and wives in urban and rural areas. This is because urban women are better educated and exposed to family planning knowledge than their rural counterparts. The number of kids still alive is another consideration. When a couple reaches their desired number of children, they often utilize contraception after talking about it and coming to a

consensus. According to a research by Khan and Patel (1997), couples that genuinely agree on the use of contraception are those who have already had living children up to two or three, and are typically initiated by men. Additionally, older mothers with four or five living children have talked about and made a shared decision regarding the use of contraception with their husband (Odewale et al., 2016).

Nigerians have limited access to modern contraception as a result of a complex interaction of systemic, social, and personal variables. Strong political will, community mobilization, and stakeholder collaboration are required to support a well-funded program that ensures access to sexual and reproductive health information, products, and services for everyone, wherever they live, regardless of their marital status or socioeconomic status, in order to achieve significant improvement (Jimoh, 2020).

Culture, religion, marital status, husband and wife fertility desires, women's independence, education, place of residence, wealth index, occupation, age, cases of abortion or STDs, and spousal communication are other socioeconomic factors that affect the usage of contraceptives (Odewale et al., 2016).

2.0 THEORETICAL FRAMEWORK.

This chapter contains theories that explain fertility changes in relation to the use of modern contraception and other socio- economic factors.

2.1 Demographic Transition Theories

The most well-known hypothesis explaining population rise is the demographic transition theory, also referred to as the first demographic transition or the classic demographic transition. Fertility and death fluctuations over a specific length of time cause changes in the number of the world's population (Amaral, 2018).

The dominant paradigm for explaining how fertility changes is known as "the theory of demographic transition." When a society transitions from high fertility and high mortality (pre-transition) to low fertility and low mortality (post-transition), it is said to be in a demographic transition. According to traditional demographic research, socioeconomic advancement and modernization are the root causes of demographic shift. (National Research Council, 1999).

A process that eventually came to be known as the demographic shift, substantial drops in mortality and fertility began in much of Europe in the late nineteenth century. Most of the time, fertility decline came before mortality decline. The idea was that the former encouraged the latter. As infant mortality rates decrease, unchecked reproduction results in "too many" live births. At that time, modern contraception turns into a method for families to save money on expensive children and free up funds for their maintenance and quality (Bhattachary & Chakraborty, 2014).

Demographers attempt to make sense of many of the events and trends they notice using the framework provided by the demographic transition theory. Special focus has been placed on the phenomenon of explaining fertility change, especially fertility within marriage, and on economic considerations as the explanatory variables (Cleland & Wilson, 1987).

(Amaral, 2018) further stated according to literature that throughout the course of society modernization, there are four stages of mortality and fertility change. High birth and death rates and minimal change in population size define the first stage. A drop in mortality, industrialization, and modernization, as well as lower death rates and higher birth rates, define the second stage, which is also marked by rapid population expansion. Reduced fertility, decreased birth and mortality rates, and a slowdown in population expansion are the characteristics of the third stage The fourth stage, on the other hand, is characterized by relatively

low fertility and mortality, minimal variations in fertility, and any naturally occurring increase or reduction that is solely attributed to fertility.

According to (Bhattachary & Chakraborty, 2014), the first to control marital fertility are wealthier households, which also start a process of indirect diffusion that eventually reduces fertility across socioeconomic groups. A culture of intentional contraception is required as a result of a fall in mortality, which also encourages fertility reductions.

2.2 Diffusion of Innovation Theory

Innovations are concepts, actions, or products that are viewed as novel by their target audience and how these inventions are adopted by a population is explained by the diffusion of innovations theory (Robinson, 2009).

As individuals learn about an innovation, such as a new evidence-based strategy for extending or improving health care, a social process known as diffusion takes place. Diffusion, in its traditional sense, refers to how an innovation spreads over time among members of a social system via certain pathways (Dearing & Cox, 2018). Since it has been studied for more than 30 years, one of the most well-known adoption models is that described by Rogers. The four main factors in the dissemination of innovations, as stated by Rogers in his definition are innovation, communication channels, time, and social system (Sahin, 2006).

Researchers have recently reexamined the role that diffusion theory played in predicting the date and pace of the fertility transition as a result of rising dissatisfaction in the field over the demographic transition theory's lack of predictive power. The fundamental tenet of diffusion theory is that social interaction is an important process through which new ideas, technology, and behaviors are adopted. On how diffusion should be defined, there are, nevertheless, a variety of opinions (National Research Council, 1999).

It was stated according to the report of a workshop (Population et al., 1999), that the dissemination of new technologies, ideas, and behaviors in the context of family planning is influenced by knowledge, attitudes, and use of contraceptives as well as beliefs about the advantages and disadvantages of childbearing. Overall consensus among the workshop participants was that the definition of diffusion must include both items, technologies, procedures, or ideas, as well as awareness of these things and the norms and values connected to behavioral change.

The case of family planning in developing nations is one of the best demonstrations of the viability of the "diffusion of innovations" theory. The goal of advocates for health, development, and the environment in developed nations to normalize the use of modern contraceptives and reduce reproduction in developing nations manifested itself in concerted efforts to influence key decision-makers in these nations. Once they were on board, these high-level leaders worked with local, national, and international funding organizations as well as private foundations to create community education and mass media campaigns. They also established clinic infrastructure, trained medical professionals like doctors and nurses, and outreach workers, and created a new, diverse "cafeteria" of contemporary methods (Murphy, 2010).

The "diffusion of innovative attitudes and behaviors" has been studied by social scientists as a key mechanism for altering the conception of fertility and actions of couples. The diffusion process—by which some people alter their attitudes and behaviors becomes a social dynamic that disseminates new concepts and practices regarding decreased fertility among the populace (Cross et al., 2022).

Family planning initiatives, as well as population strategies in general, according to researchers, have facilitated the spread of technical information on and access to contraception. Programs have aided in

some countries' accelerated fertility drop and hence slowed total population increase (National Research Council, 1999).

3.0 RESEARCH DESIGN

The third chapter of this paper provides a clear explanation of the methodology and argues for the appropriateness of the chosen study design.

3.1 Research Method

This paper made use of both quantitative methods and qualitative methods. Secondary data was derived and computed from the 2018 Nigerian Demographic and Health Survey (NDHS) dataset. The questions in the DHS questionnaire cover respondents' religion, age, level of education, type of residence (urban or rural), desired number of children, knowledge and use of specific modern contraceptive methods (Female sterilization, male sterilization, implants, IUD, Injectable, Pill, emergency contraception, male condom, and female condom). A review of literatures was also adopted to explore various family planning policies in Nigeria and measure their impact on the use of modern contraception in Nigeria. The phrases "family planning policy in Nigeria," "family planning programs in Nigeria," and "family planning policy and modern contraceptive prevalence in Nigeria" were used in an electronic search of the published literature.

3.2 Sample Selection

In the NDHS – 2018 data set, 40427 Household were sampled, with a total of 41821 females within the age of 15 – 49 years as respondents. For this research, a sub sample size of 28888 married women between the age of 15-49 years was analyzed.

3.3 Data Analysis

Data collected from the 2018 Nigerian Demographic Health Survey (NDHS) was analyzed using logistic regression model. This is because logistic regression model helps to understand how different predictor variables are related to the likelihood of a particular outcome occurring. The result of the data analysis was used to test the hypothesis as well. R studio version 4.1.2 was used for data analysis.

The formula for the logistic regression model is as follows:

$$\log(p / (1 - p)) = \beta0 + \beta1 * V013 + \beta2 * V025 + \beta3 * V106 + \beta4 * V130 + \beta5 * V613 + \beta6 * V218 + \beta7 * V301$$

where:

- p is the probability of modern contraceptive use (V313_binary)
- log(p / (1 - p)) is the log-odds (logit) of modern contraceptive use
- β0 is the intercept (constant term)
- β1 to β7 are the coefficients for each independent variable
- V013 is the age of the women
- V025 is the place of residence (urban or rural)
- V106 is the level of education
- V130 is the religion
- V613 is the desired/ ideal number of children
- V218 is the number of living children
- V301 is the knowledge of modern contraceptive

3.4 Variables and Measurements

3.4.1 Dependent Variable

The dependent variable for this study is the use of modern contraceptives among married women in Nigeria. This variable was coded as a binary outcome, with "1" indicating that a respondent is using modern contraceptives and "0" if they are not using modern contraceptives.

3.4.2 Independent Variables

The main independent variable of interest is religion, which will be divided into three categories: Christianity, Islam, and Traditional/Other. Other independent variables that was considered include age, level of education, type of residence (urban or rural), number of living children and desired number of children. These variables were included in the logistic regression model to control for possible confounding factors.

3.4.3 Control Variables

Control variables included respondents' knowledge and use of specific modern contraceptive methods (female sterilization, male sterilization, implants, IUD, injectable, pill, emergency contraception, male condom, and female condom). These variables will help to better understand the relationship between religion and modern contraceptive use, while controlling for other factors that may influence the outcome.

3.5 Ethical Considerations

The data used in this study is secondary data from the 2018 Nigerian Demographic and Health Survey (NDHS), which is publicly available and de-identified. Therefore, no additional ethical approval is required for this study. However, the findings of the study will be presented in a way that maintains the anonymity of the respondents and does not stigmatize any particular religious group.

3.6 Validity and Reliability

The NDHS dataset is a nationally representative sample, which ensures the external validity of the findings. The survey questions related to the use of modern contraception have been previously validated and tested for reliability, ensuring the accuracy and consistency of the data. The logistic regression model is a widely accepted method for analyzing binary outcomes, and it has been successfully used in similar studies, ensuring the internal validity of the findings.

3.7 Limitations

The main limitation of this study is its cross-sectional design, which prevents the establishment of causal relationships between the variables. Additionally, the data is based on self-reported information, which may be subject to recall bias and social desirability bias. Finally, the study focuses on married women only, limiting the generalizability of the findings to other populations, such as unmarried women or men.

Table 1: Frequency Distribution of Married Women Aged 15-49 years according to background characteristics.

Variable	Frequency	
Age	Total	%
15 – 19	1927	6.6
20 – 24	4362	15.0
25 – 29	6060	20.8
30 – 34	5417	18.6
35 – 39	4841	16.6
40 – 44	3457	11.9
45 – 49	3026	10.4

Education		
No-education	12955	44.5
Primary	4580	15.7
Secondary	8767	30.1
More than secondary	2788	9.6
Knowledge of modern contraception		
Any method	27490	94.5
Modern method	27316	93.9
Residence		
Urban	11790	40.5
Rural	17299	59.5
Religion		
Catholic	2633	9.1
Other Christians	9629	33.3
Islam	16396	56.8
Traditionalist	107	0.4
Other Religion	123	0.4

Source: DHS, 2018.

4.0 DISCUSSION OF FINDINGS

4.1 Logistic Regression Model

The analysis of the study's findings is presented in this chapter. Insights into married women's use of modern contraceptives in Nigeria were disclosed by the study in a number of significant ways.
Overall, the results indicate that there is a low modern contraceptive uptake amongst married women in Nigeria. Only 11.7% of the sampled married women use a modern contraceptive, while the remaining 88.3% of the respondents either use a traditional method, a folkloric method or no method at all as shown in Figure 1 below.

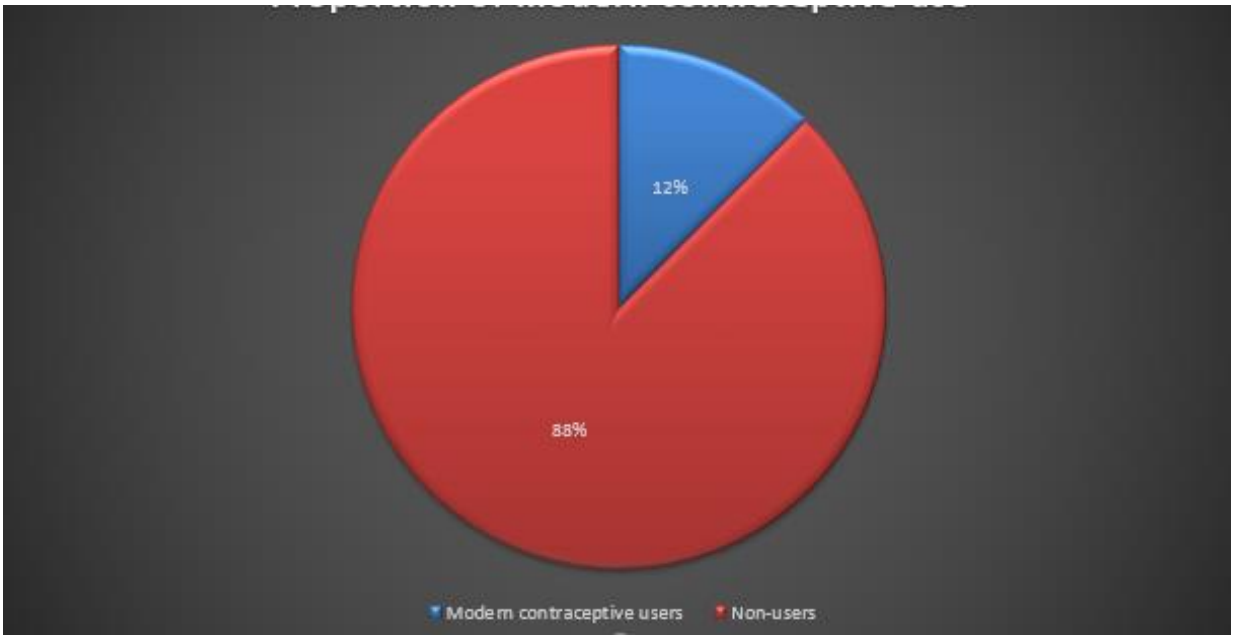

Figure 1: Prevalence of modern contraceptive use amongst married women.

This implies that despite initiatives to expand access to modern contraceptives, there is still a sizable unmet need for family planning services in Nigeria. This finding is in line with earlier studies that have pointed out that Nigerians have limited access to modern contraception as a result of a complex interaction of systemic, social, and personal variables (Jimoh, 2020).

Table 2: Distribution and association between study variables and modern contraceptive use.

Variable	Non Users (%)	Modern Contraceptive Users (%)
Desired/Ideal number of children		
0	700 (95%)	40 (5%)
1	13 (87%)	2 (13%)
2	248 (77%)	75 (23%)
3	1045 (79%)	281 (21%)
4	4158 (81%)	955 (19%)
5	3528 (85%)	639 (15%)
6+	15811 (92%)	1393 (8%)
Level of Education		
No education	12148 (96%)	577 (4%)
Primary education	4149 (86%)	661 (14%)
Secondary education	7184 (82%)	1573 (18%)
Tertiary education	2022 (78%)	574 (22%)
Age		
15-19	1764 (97%)	48 (3%)
20-24	3970 (92%)	356 (8%)
25-29	5284 (88%)	690 (12%)

30-34	4581 (86%)	718 (14%)
35-39	4019 (84%)	774 (16%)
40-44	3025 (85%)	525 (15%)
45-49	2860 (91%)	274 (9%)
Religion		
Catholic	2260 (86%)	373 (14%)
Other Christians	7821 (81%)	1808 (19%)
Islam	15201 (93%)	1195 (7%)
Traditionalist	105 (98%)	2 (2%)
Other religion	116 (94%)	7 (6%)
Knowledge		
No method	1692	0
Only Folkloric method	66	0
Only traditional method	117	0
Modern contraceptive	23628 (87%)	3385 (13%)
Number of Living Children		
0	2210 (99%)	24 (1%)
1	3888 (92%)	331 (8%)
2	4256 (89%)	552 (11%)
3	3898 (86%)	623 (14%)
4	3532 (85%)	645 (15%)
5	2815 (83%)	558 (17%)
6+	4904 (88%)	652 (12%)
Place of residence		
Urban	8608 (83%)	1795 (17%)
Rural	16895 (91%)	1590 (9%)

In terms of the socio-demographic factors that significantly influence modern contraceptive use, the odd ratios (OR) and p-values reveal the following:

Firstly, the results revealed that religion had a significant impact on the use of modern contraception among married women in Nigeria. Specifically, Muslim women were less likely to use modern contraceptives compared to Christian women, with an odds ratio of 0.58 ($p < 0.001$). Women belonging to other Christian religions (OR = 1.39, $p < 0.001$) are more likely to use modern contraceptives compared to those who are Catholic.

Secondly, the study found that level of education had a strong positive influence on modern contraceptive use among married women in Nigeria. Women with primary education (OR = 2.25, $p < 0.001$), secondary education (OR = 2.96, $p < 0.001$), and higher education (OR = 3.90, $p < 0.001$) are more likely to use modern contraceptives compared to those with no education.

Additionally, the study found that place of residence had a significant influence on the use of modern contraception among married women in Nigeria. Women living in rural areas (OR = 0.73, $p < 0.001$) are less likely to use modern contraceptives compared to those living in urban areas.

The age of the respondents appears to have a statistically significant effect on the use of modern contraceptive, as indicated by the p-value of 1.29e-05 for the age category 45-49. The odds ratio of 0.46 for this category suggests that respondents within this age range were about 0.46 times less likely to use

modern contraceptives compared to the reference age group of 15-19. However, the odds ratios for the other age categories (20-24, 25-29, 30-34, 35-39, and 40-44) were not statistically significant, meaning that there was not enough evidence to suggest that these age groups had a significant effect on the use of modern contraceptives.

Compared to women who desire to have no children, women who desire to have one, two, three, four, or five children have higher odds of using modern contraceptives. For example, women who desire to have two children have 4.86 times higher odds of using modern contraceptives ($p < 0.01$) compared to women who desire to have no children. Similarly, women who desire to have three children have 3.73 times higher odds of using modern contraceptives compared to women who desire to have no children.

Also compared to women who have no living children, women who have one, two, three, four, five, or six or more living children have higher odds of using modern contraceptives. For example, women who have two living children have 9.97 times higher odds of using modern contraceptives compared to women who have no living children. Similarly, women who have six or more living children have 30 times higher odds of using modern contraceptives compared to women who have no living children.

Based on the logistic regression analysis conducted, the study sought to examine the extent to which socio-demographic characteristics affect the use of modern contraceptives among married women in Nigeria. The results indicate that factors which have positive significant influence on the use of modern contraceptive include level of education, type of residence, number of living children and religion. On the other hand, other factors such as the knowledge about modern contraceptives and desired/ideal number of children do not significantly affect modern contraceptive use positively.

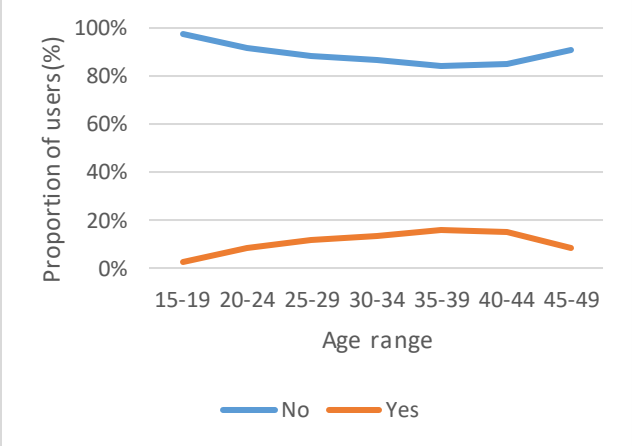

Figure 2: Modern contraceptive use by age

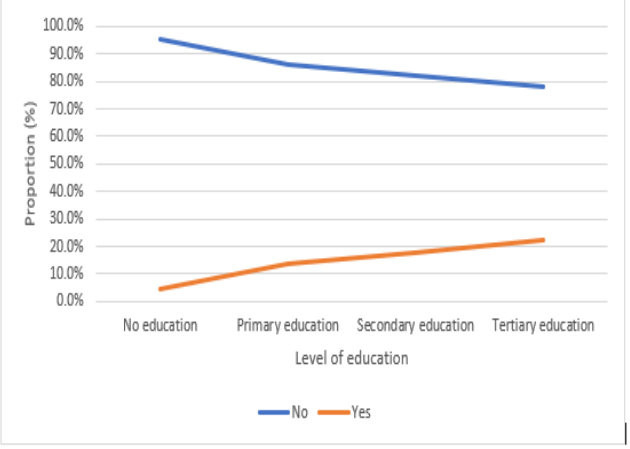

Figure 3: Modern contraceptive use by level of education

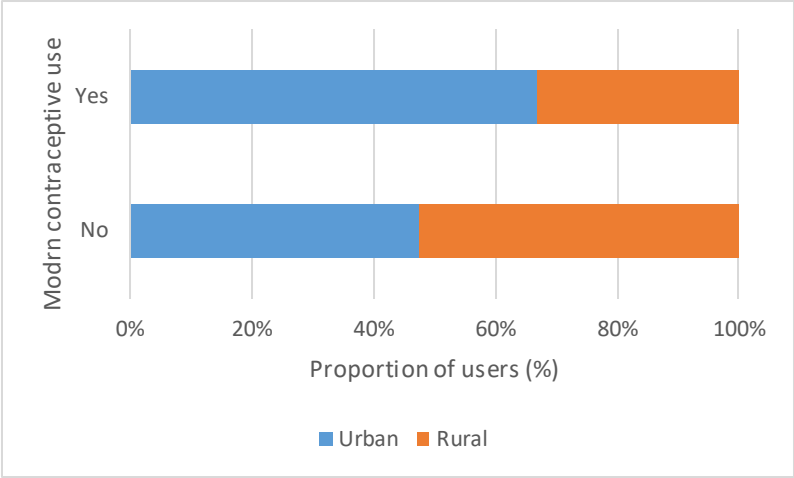

Figure 4: Modern contraceptive use by place of residence

The summary of the logistic regression model shows the estimated coefficients, standard errors, z values, and p-values for each predictor variable.

Table 3: Summary of logistic regression model

	Estimate	**Odd ratio**	**Std. Error**	**z value**	**P value**
(Intercept)	-20.62573	1.10E-09	89.87333	-0.229	0.81848
Age of respondents					
15 – 19 (ref)					
20 – 24	0.21117	1.24	0.16425	1.286	0.19857
25 – 29	0.01768	1.02	0.16391	0.108	0.91409
30 – 34	-0.14755	0.86	0.16711	-0.883	0.37725
35 -39	-0.09685	0.91	0.16927	-0.572	0.56722
40 – 44	-0.17251	0.84	0.17272	-0.999	0.31790
45 – 49	-0.78052	0.46	0.17892	-4.362	1.29e-05 ***
Type of Residence					
Urban (ref)					
Rural	-0.31247	0.73	0.04163	-7.506	6.10e-14 ***
Level of education					
No education (ref)					
Primary education	0.81085	2.25	0.06519	12.439	< 2e-16 ***
Secondary education	1.08579	2.96	0.06326	17.163	< 2e-16 ***
Higher education	1.36225	3.90	0.07854	17.346	< 2e-16 ***
Religion					
Catholic (ref)					
Other Christians	0.33172	1.39	0.06427	5.161	2.46e-07 ***
Muslims	-0.06725	0.93	0.07013	-0.959	0.33757
Traditionalists	-1.36747	0.25	0.72398	-1.889	0.05892
Others	-1.03163	0.36	0.40206	-2.566	0.01029*

Number of living Children					
0 (ref)					
1	1.79130	6.00	0.21518	8.325	< 2e-16 ***
2	2.29930	9.97	0.21359	10.765	< 2e-16 ***
3	2.69439	14.80	0.21470	12.550	< 2e-16 ***
4	3.08608	21.89	0.21638	14.262	< 2e-16 ***
5	3.39754	29.89	0.21886	15.524	< 2e-16 ***
6+	3.40134	30.00	0.22016	15.450	< 2e-16 ***
Knowledge of modern contraceptive					
Knows no method (ref)					
Only folkloric method	-0.04539	0.96	462.77942	0.000	0.99992
Only traditional method	-0.22297	0.80	355.37438	-0.001	0.99950
Modern method	14.63302	2264860.77	89.87282	0.163	0.87066
Desired/Ideal number of children					
0 (ref)					
1	0.83671	2.31	0.81074	1.032	0.30206
2	1.58060	4.86	0.22017	7.179	7.03e-13 ***
3	1.31759	3.73	0.18432	7.148	8.78e-13 ***
4	1.08446	2.96	0.17286	6.274	3.53e-10 ***
5	0.86366	2.37	0.17362	4.974	6.55e-07 ***
6+	0.50305	1.65	0.16897	2.977	0.00291**

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(ref) – reference category

4.2 Review of Family Planning Policies and Programs in Nigeria

The National Population Policy, National Policy on Population for Sustainable Development, National Reproductive Health Policy and Strategic Plans, Nigeria Family Planning Blueprint (Scale-Up Plan) – free commodity policy, National Reproductive Health Commodity Security Strategic Plans, and National Guidelines on Contraceptive Logistics Management System are just a few of the policies and strategic plans that the Federal Government of Nigeria (FGON) has adopted and put into practice since the late 1980s (FMOH, 2014).

4.2.1 The National Population Policy

As seen by the updated National Population Policy (2018), family planning concerns have recently been at the center of talks on population and development in Nigeria. To accelerate economic growth and realize the demographic dividend, the federal government of Nigeria made investments in family planning and other pertinent economic areas. (FMOH, 2020b).

Given the three-tiered structure of government, it is the state ministry of health's duty to adopt and implement federal ministry of health developed policies. This has been a recurrent issue with the prompt and effective execution of the majority of policies and recommendations because the federal ministry of

health can only argue for the domestication of these policies. For instance, 13 out of the 36 states in Nigeria are yet to start domesticating the task shifting/task sharing policy since it was approved in 2012. The National Family Planning Blueprint was introduced in 2014, but 14 states are yet to domesticate it into costed implementation plans at the state level (FMOH, 2020b).

The framework for the creation and execution of population policies and programs in Africa was established during the meeting in Arusha, Tanzania in 1984, which served as a prelude to the second World Conference on Population in Mexico City the same year. In response, the Nigerian government created the country's first population policy in 1988 under the name National Policy on Population for Development, Unity, Progress, and Self Reliance (NPCN & HPP, 2015). General Ibrahim Babangida, who was Nigeria's military leader and Professor Olikoye Ransome-Kuti, then the country's minister of health, drafted the country's first population policy. Its primary goals were to raise people's standards of living, to advance their health and welfare, particularly by preventing the early deaths and illnesses of high-risk mothers and children, and to lessen population growth rates by voluntary methods of fertility regulation that are compatible with achieving the country's economic and social goals (Auwalu, 2016).

The goal of the policy was to lower fertility (four children per woman by 2000), the percentage of young marriages, the population growth rate, and infant mortality by increasing access to family planning services and family life education throughout the nation. Following the policy's introduction, the government, civic society, and development partners created a work plan for its implementation. Despite efforts to spread the work plan and modify it for local circumstances, execution was hampered by a lack of funding, ineffective coordination between the key agencies and service providers, and a lack of political will. The policy's objectives had not been met by the termination date (NPCN & HPP, 2015). The particular family planning-related goals were to:

- Lower the population growth rate from roughly 3.0% per year to 2.5% by 1995 and 2.0 by the year 2000. Lower the total fertility rate to 4.0 at that time.
- By 1995 and 2000, 50% of women of childbearing age will have access to family planning services.
- Cut the number of pregnancies among women under the age of 18 and over the age of 35 by 50% in 1995 and by 90% in 2000.
- Cut the percentage of women who have more than four children in half in 1995 and by 80% in 2000.

Unfortunately, the policy did not succeed in meeting its goals by the termination date. The 1988 National Population Policy failed due to an underestimation of the significant financial resources required for implementation, a lack of political will, poor and uncoordinated organization, gender divide, and the protracted political instability, according to an evaluation of the policy's targets and objectives in light of the 1995 and AD 2000 benchmarks (Shofoyeke, 2014). Additionally, the National population policy's clinic-based, physician-controlled family planning programs and the public sector cannot meet the high unmet demand for family planning services, which was estimated to be over 28% and involves over 4.76 million women, particularly in the rural areas and northern part of Nigeria as at 2010. The demand is particularly high in these regions (Monjok et al., 2010). (Adekunle & Ololorin, 2000)'s review of the Nigerian Population Policy's (NPP) general goals and particular objectives for the year 2000 shows that every goal was completely missed. The population was estimated to be approximately 148 million as at yea 2000, having grown at an average annual rate of roughly 3.0%. In contrast to the predicted 80% expected in 2000, the prevalence rate of contraceptives in 2000 was between 11% and 13%.

4.2.2 Reproductive Health Strategic Plan

Again, reproductive health became a key focus of many nations' population and development initiatives, including Nigeria, as a result of the 1994 Cairo International Conference on Population and Development. In this context, the Federal Ministry of Health's Reproductive Health Division, with assistance from POLICY Project, created a 5-year reproductive health strategic plan for the years 2002–2006. This strategic plan and framework are designed to turn the reproductive health policy into workable plans. One of the major components of reproductive health which the plan aimed to focus on was family planning. Through improved reproductive health, the strategic framework seeks to improve the standard of living for all Nigerians, including men, women, and children. As a result, the primary goals are to cut the maternal mortality rate by 90% and the perinatal mortality rate by 30% from the levels in 1999. Increasing the prevalence of contraceptives was thus one of the goals, among others. The logistics and management unit for contraceptives was created, and the appropriate staff were trained. Yet, ineffective zone-level and zonal-to-federal logistical management and coordination led to frequent instances of stock-outs and commodity expiration (FMOH, 2002).

4.2.3 National Policy on Population for Sustainable Development

Nigeria enacted the National Policy on Population for Sustainable Development 2004 in 2005, making it the second instance of this policy in the history of the country. The majority of the policy's targets have an end date of 2015, and it aims to raise people's living conditions and quality of life by addressing the intricate linkages between population growth and development (NPCN & HPP, 2015). A 2% population growth rate by 2015 or later is the target the Nigerian government has set in its National Economic Policy, according to the policy paper. Another objective it established was to increase the prevalence of modern contraceptives by at least 2 percentage points annually and reduce the overall fertility rate by at least 0.6 children every five years (Shofoyeke, 2014). Again, a large portion of the National Policy on Population for Sustainable Development's objectives weren't met throughout the implementation window (Health Policy Plus, 2017). The findings by (NPCN & HPP, 2015) shows that although the 2004 population strategy addressed the relevant development concerns of the time, it was not successfully implemented at the levels of the federal government, states, or local government areas. As a result, the policy targets were not met, and according to a subset of respondents, there haven't been many advances in the health and wellbeing of Nigerians lately. The execution of the strategy was hampered by a number of problems, including;

- Limited applicability to subnational levels due to national focus of policy aims;
- Declining policy content relevance in light of new and emerging population and development concerns including migration and displacement caused by conflict or insecurity
- Changes in policy/programmatic priorities—and weakened institutional memory—as a result of changes in administration/government, coupled with limited integration of the policy within new national development efforts.
- A weak enabling environment, characterized by pervasive cultural/religious practices, gender norms, and poverty

4.2.4 The Nigeria Family Planning Blueprint (Scale-Up Plan)

The Federal government of Nigeria further made significant progress toward creating a more supportive political environment for family planning. Among these is the commitment to boost domestic finance for family planning made during the 2012 London Conference on Family Planning. A group of specialists lead by the Federal Ministry of Health (FMOH) represented Nigeria at the London Summit. They agreed to increase domestic funding for family planning at the summit. The Federal Government of Nigeria (FGON) pledged to allocate an additional $8.35 million annually, or nearly a 300 percent increase,

exclusively for family planning and reproductive health (RH). The Nigeria Family Planning Blueprint (Scale-Up Plan) was developed as a result of the commitments made at the London Summit. It offers a road map for achieving the Federal government of Nigeria's objectives of increasing access to family planning services and lowering maternal mortality through a concerted national scale-up family planning effort over a five-year period (2013–2018). The Nigerian government set a goal of achieving a 36 percent Contraceptive Prevalence Rate by 2018 as part of its Family planning 2020 pledge (FMOH, 2014).

Also, in April 2011, the Federal ministry of health introduced a free commodity policy that made all family planning products at public facilities freely available to all women. Finally, the legislation that allows community health extension workers to offer injectable dramatically increased the number of possible service providers for this crucial technology across the nation (FMOH, 2014). Again, (FMOH, 2014) stated that the federal government of Nigeria has recently taken immediate action to create the necessary favorable and conducive environment for the provision of and access to high-quality health care by Nigerians in their various localities. The Midwife Service Scheme (MSS), the policy on free contraceptives and life-saving maternal/Reproductive Health commodities, the expedited implementation of activities centered around long-acting reversible contraceptive (LARC) methods, task shifting with proper supervision of the community health extension workers, the creation of budget lines, and increased funding for crucial activities such as the procurement and distribution of necessary reproductive health commodities were a few of these measures.

4.2.5 National Reproductive Health Policy

The Federal Government of Nigeria also established the National Reproductive Health Policy in 2010 with the intention of ensuring accessibility to complete sexual and reproductive health information as well as high-quality treatments. The Policy achieves this by attempting to address a number of the issues it identifies, such as: insufficient funding, insufficient human resources, poor integration of maternal and family planning services, the high cost of goods at service delivery points, limited efforts to increase demand for family planning, a high level of unmet need for family planning, insufficiently equipped facilities, and a lack of connections between adolescent reproductive health services and the regular health service delivery system (Public Health Institute, 2015).

Table 4: Summary of Nigerian family planning programs and policies' outcome on contraceptive prevalence.

Program/Policy	Date launched	End date	Target on modern contraceptive prevalence	Impact
National Population Policy	1988	2000	80% contraceptive uptake by 2000	• Target not met • Contraceptive prevalence rate remained at 11% as at the end date
Reproductive health strategic plan	2002	2006	Increasing modern contraceptive prevalence	• Target not fully met due to ineffective zone-level and zonal-to-federal logistical management and coordination which

				led to frequent instances of stock-outs and commodity expiration
National Policy on Population for Sustainable	2005	2015	To increase the prevalence of modern contraceptives by at least 2% points annually resulting to a 30.2% mCPR by 2015.	• Target not met. • Modern contraceptive prevalence was at 9.8% as at the end date
Nigeria Family Planning Blueprint (Scale-Up Plan) – free commodity policy	2013	2018	Increasing CPR from 15% to 36% by 2018	• Target not met. • 3% increase in CPR • 1.7 million additional women and girls used modern contraceptives in 2018 compared to 2012 • According to the NDHS (2018) report, the national CPR was 18% and the mCPR was 13% for all women, while it was 17% and 12% respectively for married women.

In conclusion, the availability of some goods and services has improved thanks to new supply and distribution initiatives and the increasing demand for condoms brought on by increased knowledge of HIV/AIDS, but not for implants or long-term or permanent contraception. The need for IUDs and injectable is still significant, but there is a need to increase services for implants, permanent contraception, and emergency contraceptive pills, particularly for teenagers and young adults who have a high demand (FMOH, 2002). Also, a slow but steady progress has been made towards the modern contraceptive prevalence through different policies and programs.

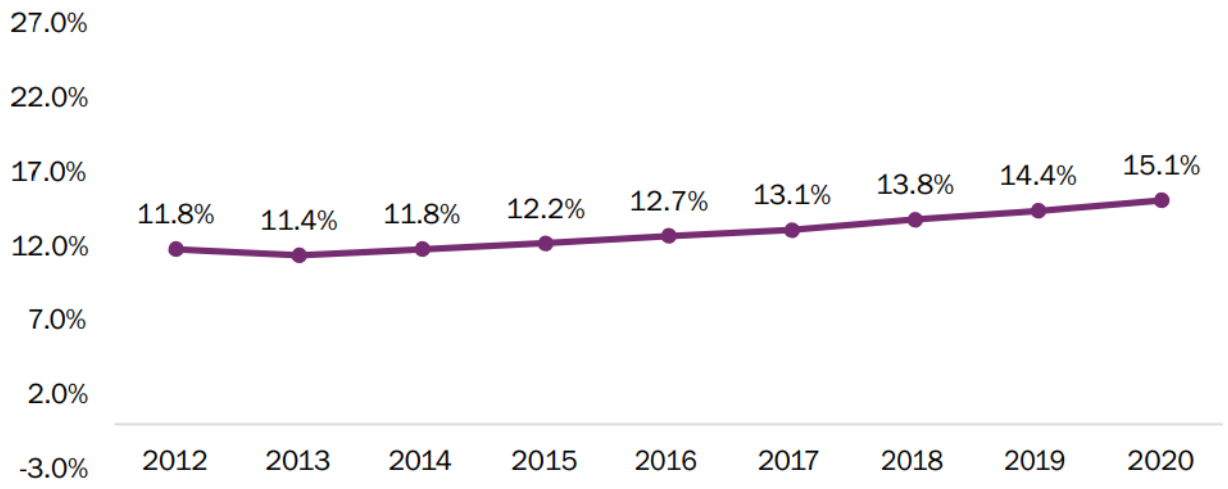

Figure 5: FP2020 Projected Trend in mCPR: 2012-2020
Source: (FMOH, 2020a)

4.3 RECOMMENDATIONS.

Based on the result of findings, presented below are recommendations to improve modern contraceptive use and prevalence in Nigeria.

- Overall, these findings revealed that educational attainment, type of residence, and religious affiliation play a crucial role in the use of modern contraceptives among married women in Nigeria. Thus, there is a need for targeted education and awareness programs that cater to rural women and women with no education. Additionally, it is recommended that efforts to promote modern contraceptive use should consider religious affiliation and beliefs.
- There should be an increase in public sector funding for initiatives relating to health, education, and other programmatic areas of population policy by advocating for tighter budgets at the state and local government levels. Funding should be accessible for population-related activities such as advocacy, social mobilization, research promotion, coordination, and collaboration for all implementers, including non-service delivery groups.
- It is also recommended that Nigeria Adopts one of Namibia's sexual and reproductive health policy which states that Family planning (FP) services and information should be freely accessible to all, regardless of their age, gender, sexuality, religion, political views, or socioeconomic situation at all levels of the healthcare delivery system (Directorate of Primary Health Care, 2012). This policy has proven to contribute to the high level of contraceptive prevalence and modern contraceptive prevalence in the country.
- Intensified public knowledge of family planning, particularly modern contraceptives should be promoted by civil society organizations, health extension personnel in outreach initiatives, and the media on talk radio and television programs
- It is important to ensure that there is a more intentional approach to monitoring and evaluation of policy's implementation. Also, decisions and planning should be informed by both local and international research.

CONCLUSION

Overall, the results of this analysis suggest that socio-demographic factors play a significant role in modern contraceptive use among married women in Nigeria. This is consistent with the result of previous studies by (Odewale et al., 2016).

The results highlight the importance of considering socio-demographic factors in reproductive health interventions as well as programs aimed at increasing the uptake of modern contraceptives among married women in Nigeria. Specifically, efforts to improve education and access to health services in rural areas, and to address the influence of religion on reproductive health decision-making, may help to increase the use of modern contraceptives among married women in Nigeria.

The analysis found that the likelihood of using modern contraceptives increases with age, with those in the 20-24 age group having a higher odds ratio than those in the 15-19 age group. In addition, respondents residing in rural areas were less likely to use modern contraceptives than those in urban areas as also consistent with (Ankomah et al., 2011)'s study. Furthermore, education level was found to be a significant predictor of modern contraceptive use, with those who had primary, secondary, or higher education having higher odds ratios than those with no education. Religion was also found to be a significant predictor, with respondents who identified as other Christians having a higher odds ratio than those who identified as Catholics. This is consistent with other studies by (Dambo et al., 2017; Monjok et al., 2010; Odewale et al., 2016). Also, the number of living children was a significant predictor of modern contraceptive use, with each additional living child increasing the likelihood of using modern contraceptives. Similarly, the desired number of children was also a significant predictor, with respondents who desired fewer children having a higher odds ratio of using modern contraceptives.

Based on the logistic regression results, the hypothesis that religion has a significant impact on modern contraceptive use amongst married women in Nigeria is supported, as the "Other Christians" category had a significant positive effect on contraceptive use compared to Catholics. This hypothesis is in line with the study by (Odewale et al., 2016). However, the effect of being a Muslim or a Traditionalist on contraceptive use was not significant.

The hypothesis that socio-demographic factors such as age, place of residence, and level of education have a strong positive influence on modern contraceptive use is also supported by the results. The odds ratios for age, place of residence, and level of education were statistically significant, indicating that as age, level of education, and urban residence increase, the odds of using modern contraceptives also increase. Specifically, women with higher levels of education had a significantly higher odd of using modern contraceptives compared to women with no education. Similarly, women living in rural areas had a significantly lower odd of using modern contraceptives compared to those living in urban areas.

However, the hypothesis that knowledge about modern contraceptives, number of living children, and desired/ideal number of children have no influence on modern contraceptive use is not supported by the results. The number of living children had a significant positive effect on contraceptive use, with the odds of using modern contraceptives increasing as the number of living children increased. The desired/ideal number of children on the other hand did not have a significant positive influence on modern contraceptive use. This is because the odds of using modern contraceptives were higher with women who wanted more children, compared to women who wanted no children. The coefficients for knowledge about modern contraceptive suggest no significant relationship with modern contraceptive use. This is consistent with the report by (UNDESA, 2020) that despite the high prevalence of sexual activity and general understanding of various contraceptive options among Nigerians, modern contraceptive uptake is still quite low.

In conclusion, women with secondary and tertiary education and living in urban areas have about three-time higher prevalence of modern contraceptive use. This is consistent with innovation diffusion theory that explains how inventions are adopted by a population (Robinson, 2009). In this case, the spread of contraception begins with more educated and urban segments of the population. However, the proportion of married women with high education in the population is only 9%, while the proportion of married women without any education is 44%. The low involvement of women in education may be one of the barriers to the spread of contraception among married women in Nigeria.

BIBLIOGRAPLY

Aina, I. T., & Aina-Pelemo, A. D. (2019). The Use of Contraceptives in Nigeria: Benefits, Challenges and Probable Solutions. *Journal of Law, Policy and Globalization.*

Adekunle, A. O., & Otolorin, E. O. (2000). Evaluation of the Nigerian population policy—Myth or reality? *African Journal of Medicine and Medical Sciences*, *29*(3–4), 305–310.

Adeyoju, T. O. (2013). *Fertility intention and contraceptive use among males in Nigeria*. https://core.ac.uk/reader/39671860

Aina, I., & Aina-Palemo, A. (2019). The Use of Contraceptives in Nigeria: Benefits, Challenges and Probable Solutions. *Journal of Law, Policy and Globalization*. https://doi.org/10.7176/JLPG/86-09

Akamike, I. C., Okedo-Alex, I. N., Eze, I. I., Ezeanosike, O. B., & Uneke, C. J. (2020). Why does uptake of family planning services remain sub-optimal among Nigerian women? A systematic review of challenges and implications for policy. *Contraception and Reproductive Medicine*, *5*(1), 30. https://doi.org/10.1186/s40834-020-00133-6

Alo, O. D., Daini, B. O., Omisile, O. K., Ubah, E. J., Adelusi, O. E., & Idoko-Asuelimhen, O. (2020). Factors influencing the use of modern contraceptive in Nigeria: A multilevel logistic analysis using linked data from performance monitoring and accountability 2020. *BMC Women's Health*, *20*(1), 191. https://doi.org/10.1186/s12905-020-01059-6

Amaral, E. F. L. (2018). *Theories of Demography*. Texas A & M University. https://www.ernestoamaral.com/docs/soci312-18fall/Lecture02.pdf

Ankomah, A., Oladosu, & Anyanti. (2011). Myths, misinformation, and communication about family planning and contraceptive use in Nigeria. *Open Access Journal of Contraception*, 95. https://doi.org/10.2147/OAJC.S20921

Auwalu, A., Issa. (2016). *Review of Current National Population Policy and How Media Can Help in Promoting the Policy.docx*.

Bhattachary, J., & Chakraborty, S. (2014). *Contraception and the Fertility Transition*. https://mpra.ub.uni-muenchen.de/53129/1/MPRA_paper_53129.pdf

Cleland, J., & Wilson, C. (1987). Demand Theories of the Fertility Transition: An Iconoclastic View. *Population Studies*, *41*(1), 5–30. https://doi.org/10.1080/0032472031000142516

Cross, H., Hardee, K., & Ross, J. (2022). *Completing the Demographic Transition in Developing Countries*. http://www.policyproject.com/pubs/occasional/op-8.pdf

Dambo, N., Jeremiah, I., & Wallymahmed, A. (2017). Determinants of contraceptive use by women in the central senatorial zone of Bayelsa State, Nigeria: A cross-sectional survey. *Nigerian Medical Journal*, *58*(1), 26. https://doi.org/10.4103/0300-1652.218409

Dasgupta, A., Wheldon, M., Kantorová, V., & Ueffing, P. (2022). *Contraceptive use and fertility transitions: The distinctive experience of sub-Saharan Africa*. *46*(4).

Dearing, J. W., & Cox, J. G. (2018). Diffusion Of Innovations Theory, Principles, And Practice. *Health Affairs, 37*(2), 183–190. https://doi.org/10.1377/hlthaff.2017.1104

Directorate of Primary Health Care. (2012). *National Policy on Sexual, Reproductive and Child Health*. https://extranet.who.int/nutrition/gina/sites/default/filesstore/NAM%202012%20Sexual%2C%20Reproductive%2C%20and%20Child%20Health%20Policy.pdf

Dockalova, B., Lau, K., Barclay, H., & Marshall, A. (2016). Sustainable Development Goals and Family Planning 2020. *IPPF*. https://www.ippf.org/sites/default/files/2016-11/SDG%20and%20FP2020.pdf

Doris Dokua Sasu. (2022, January 2). *Nigeria: Contraceptive use among women, by marital status*. Statista. https://www.statista.com/statistics/1124607/contraceptive-use-among-women-in-nigeria-by-marital-status/

FMOH, F. M. of H. (2002). *NATIONAL REPRODUCTIVE HEALTH STRATEGIC FRAMEWORK AND PLAN 2002 – 2006*. http://www.policyproject.com/pubs/countryreports/NIG_RHStrat.pdf

FMOH, F. M. of H. (2014). *Nigeria Family Planning Blueprint (Scale-Up Plan)*.

FMOH, F. M. of H. (2020a). *Nigeria Family lanning Blueprint 2020—2024*. https://www.health.gov.ng/doc/Final-2020-Blueprint.pdf

FMOH, F. M. of H. (2020b, June). *Nigeria National Family Planning Blueprint*. https://health.gov.ng/doc/Final-2020-Blueprint.pdf

Frank Götmark & Nicola Turner. (2022, January 18). *Religion, Fertility and Contraception in Sub-Saharan Africa, Part 4: African research and policy in Nigeria*. The Overpopulation Project. https://overpopulation-project.com/religion-fertility-contraception-in-sub-saharan-africa-4-african-research-and-policy-in-nigeria/

Gueye, A., Speizer, I. S., Corroon, M., & Okigbo, C. C. (2015). Belief in Family Planning Myths at the Individual and Community Levels and Modern Contraceptive Use in Urban Africa. *International Perspectives on Sexual and Reproductive Health, 41*(04), 191–199. https://doi.org/10.1363/4119115

Health Policy Plus. (2017). *Nigeria Population and Development Factsheet*. 1–2.

Hubacher, D., & Trussell, J. (2015). A definition of modern contraceptive methods. *Contraception, 92*(5), 420–421. https://doi.org/10.1016/j.contraception.2015.08.008

Jimoh, I. I. (2020). *Analysis of the factors affecting access to modern contraceptives in Nigeria* [KIT (Royal Tropical Institute)/Vrije Universiteit Amsterdam Amsterdam,]. https://bibalex.org/baifa/Attachment/Documents/S1TfZCAYf3_20210727152400946.pdf

Monjok, E., John E Ekabua, & Andrea Smesny. (2010). Contraceptive practices in Nigeria: Literature review and recommendation for future policy decisions. *Open Access Journal of Contraception*, 9–10, 19–20. https://doi.org/10.2147/OAJC.S9281

Murphy, E. (2010). *Diffusion of Innovations: Family Planning in Developing Countries*. *9*(1). https://www.tandfonline.com/doi/full/10.1080/10810730490271566?scroll=top&needAccess=true&role=tab

National Research Council. (1999). *The Role of Diffusion Processes in Fertility Change in Developing Countries* (p. 6475). National Academies Press. https://doi.org/10.17226/6475

Nicola Turner. (2021). *Influence of Religion and Religiosity on Fertility and Contraceptive Use in Continental Sub-Saharan Africa: A Comprehensive Review*.

NPCN, N. P. C. of N., & HPP, H. P. P. (2015). Nigeria's 2004 National Policy on Population for Sustainable Development: Implementation Assessment Report. *Washington, DC: Futures Group, Health Policy Project*.

Odewale, B. J., Oladosun, M., & Amoo, E. O. (2016). *Fertility Desire and Contraceptive Use among Women in Nigeria*.

Ogbaje, E., & Igharo, E. (2009). Contraceptive Security in Nigeria: Assessing Strengths and Weaknesses. *USAID | DELIVER PROJECT, Task Order 1*.

Olanrewaju, O. (2016). *Efforts at Discussing Fertility in Nigeria*. *2016/1*, 6–10. https://doi.org/10.13140/RG.2.2.26917.24807

Oluwasanu, M. M., John-Akinola, Y. O., Desmennu, A. T., Oladunni, O., & Adebowale, A. S. (2019). Access to Information on Family Planning and Use of Modern Contraceptives Among Married Igbo Women in Southeast, Nigeria. *ResearchGate*.

Population, N. R. C. (US) C. on, Reed, H., Briere, R., & Casterline, J. (1999). Diffusion In The Population And Family Planning Context. In *The Role of Diffusion Processes in Fertility Change in Developing Countries: Report Of A Workshop*. National Academies Press (US). https://www.ncbi.nlm.nih.gov/books/NBK230945/

Public Health Institute. (2015). NATIONAL REPRODUCTIVE HEALTH POLICY (2010). *Champions for Change*. https://riseuptogether.org/wp-content/uploads/2018/05/C4C_Nigeria_-_National_Reproductive_Health_Policy.pdf

Robinson, L. (2009). *Summary_Diffusion_Theory.pdf*. https://twut.nd.edu/PDF/Summary_Diffusion_Theory.pdf

Sahin, I. (2006). DETAILED REVIEW OF ROGERS' DIFFUSION OF INNOVATIONS THEORY AND EDUCATIONAL TECHNOLOGY-RELATED STUDIES BASED ON ROGERS' THEORY. *The Turkish Online Journal of Educational Technology*, *5*(2).

Sharan, M., Ahmed, S., May, J., & Soucat, A. (n.d.). *Family Planning Trends in Sub-Saharan Africa: Progress, Prospects, and Lessons Learned* (p. 445).

Shofoyeke, A. D. (2014). An Appraisal of the 2004 National Policy on Population for Sustainable Development. *Mediterranean Journal of Social Sciences*. https://doi.org/10.5901/mjss.2014.v5n23p2520

Starbird, E., Norton, M., & Marcus, R. (2016). Investing in Family Planning: Key to Achieving the Sustainable Development Goals. *Global Health: Science and Practice, 4*(2), 191–210. https://doi.org/10.9745/GHSP-D-15-00374

Statista. (2022, November 23). *Nigeria: Contraceptives among women 2022*. Statista. https://www.statista.com/statistics/1268145/contraceptive-prevalence-rate-among-women-in-nigeria/

Ukoji, V. U., Anele, P. O., & Imo, C. K. (2022). *Contraceptive use: Does data from the 2018 Nigeria Demographic and Health Survey indicate a shift from awareness to actual practice among sexually active childbearing women in South-south Nigeria?* [Preprint]. In Review. https://doi.org/10.21203/rs.3.rs-1999476/v1

UNDESA, U. N. D. of E. and S. Affairs. (2019). *Family Planning and the 2030 Agenda for Sustainable Development (Data Booklet)*. United Nations. https://doi.org/10.18356/e154e49d-en

United Nations. (2019). *World Population Prospects—Population Division—United Nations*. https://population.un.org/wpp/DataQuery/

United Nations, Department of Economic and Social Affairs, Population Division. (2014). *World Contraceptive Use 2014*. 4.

United Nation's Population Division. (n.d.). *SDG Indicator 3.7.1 on Contraceptive Use | Population Division*. Retrieved March 11, 2023, from https://www.un.org/development/desa/pd/data/sdg-indicator-371-contraceptive-use

United Nations Department of Economic and Social Affairs, Population Division (2020). *World*

Family Planning 2020 Highlights: Accelerating action to ensure universal access to family planning (ST/ESA/SER.A/450).

WHO. (2019). Contraception. *World Health Organization*.

APPENDIX

LIST OF TABLES

LIST OF FUGURES

LIST OF ABBREVATIONS

PMA – Performance Monitoring and Accountability
NDHS – Nigeria Demographic Health Survey
SDGs – Sustainable Development Goals.
UNDESA – United Nations Department of Economic and Social Affairs
UN – United Nations.
WHO – World Health Organization.
mCPR – Modern Contraceptive Prevalence
CPR – Contraceptive Prevalence
IUD – Intra-Uterine Device
HPP – Health Policy Plus
FMOH – Federal Ministry of Health
SRHR - Sexual and Reproductive Health Right
NGOs – Non-Governmental Organizations
MCs – Modern Contraceptives
FP – Family Planning