DETERMINANTS OF IUD UPTAKE IN KIAMBU AND MACHAKOS COUNTY

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DECLARATION

This research proposal is my original work and has not been presented to any other university for examination purposes.

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This research proposal has been submitted for examination with my approval as University Supervisor.

Signature: …………………… Date: ……………..………..

Dr. Diana Kimani

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DEDICATION

I dedicate this research report to my husband Frederick Mungai and my children Sally Mungai and Lydiah Mungai and pray that this will inspire you to work even harder and virtuously in life.

ACKNOWLEDGEMENT

ABSTRACT

Intrauterine Device (IUD) is a long term reversible family planning method which is highly effective but is underutilized both globally and locally. In Kenya, the trends in IUD use show a decline from previous years. The objective of the study was to determine IUD uptake among women seeking FP services in Kiambu and Machakos Hospitals. The study was grounded on theory of demand. The study adopted descriptive and econometrics analysis to determine the uptake of IUD among women seeking family planning services in Kiambu and Machakos Hospitals. Purposive sampling was used to select the study hospitals. Systematic sampling was used to select respondents. Sample size of 380 respondents calculated using Fishers' formula. The study established that occupation, education, age, place of residence and marital status of women sampled had a significant effect on the uptake of IUD. Based on the results, the study recommends an increase in awareness creation on the availability and benefits of IUD to remove misconceptions. In addition, the study recommends more partner involvement in family planning and girl child education.

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LISTS OF ABBREVIATIONS

CBS   -   Central Bureau of Statistics

CDF   -   Cumulative distribution function

FP   -   Family Planning

IUDs   -   Intrauterine devices

LnG IUS   -   Intrauterine System

KDHS   -   Kenya Demographic Health Survey

KNBS   -   Kenya National Bureau of Statistics

MOH   -   Ministry of Health

SPA   -   Service Provision Assessment

PID   -   Pelvic Inflammatory disease

WHO   –   World health Organizations

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Intrauterine devices (IUDs) are devices made of plastic that are inserted into a woman's uterus to prevent pregnancy. They are normally small T- or horseshoe-shaped in nature. IUDs have been used since the beginning of the twentieth century, but became a popular contraceptive method from the 1960s onwards (Amy *et al.*, 2006). Most women can utilize the IUD, including women who have never given birth, HIV positive mothers and those who have AIDS but are clinically well on treatment. IUD can be comfortably be used by women who wish to space, postpone, or constrain births, and it is suitable also for those who have maternity blues or post abortal clients (World health Organizations, 2007; World health Organizations, 2010). The IUD is amongst the most effective and reliable long acting contraceptive. Less than 10 in each 1,000 clients get to be pregnant in the primary year of IUD use (Nguyen *et al.*, 2011).

There has been a decline in IUD uptake in developing countries. In the last decade, the use of the IUD in comparison to other contraceptive methods either stagnated or declined (World health Organizations, 2010). The utilization of IUD is just in two percent in Africa. In Ghana, for example, annual reports showed a steady decline in the use of IUD from 3.3 to 1.9 percent between 1995 and 2001 (World health Organizations, 2010; Salem, 2006). In line with studies carried in sub-Saharan Africa (Ahmed et al., 2012) which showed that use of family planning (FP) helps in reducing maternal death by forty percent, infant mortality by ten percent and childhood deaths by twenty one percent.

Despite the known benefits of IUD, women especially in developing world have limited knowledge on IUD based on socio-economic, cultural conditions and inaccessibility in terms of distance and availability. Globally, the unmet need of FP is around 215 million (World health Organizations, 2012).

Low FP use in sub-Sahara Africa has been attributed to the low acceptance and cultural resistance. The social, financial and the strong kingship values attached to children in the region have contributed to low uptake of FP (Caldwell and Caldwell, 1987). Cleland et

al., (2006) stated that FP is unfinished agenda in sub-Sahara Africa as high fertility and high population growth are likely to be the impediment towards achieving the millennium development goals. The millennium goals seek to promote universal education, maternal and child health and prevention and treatment of HIV/AIDS (United Nations, 2016).

At the household level, the use of FP services helps improve well being of others in the household. Household with a small size are able to obtain the basic needs for example food, housing and clothing and in the process their lives are improved. Studies have shown families that have many children are likely to drop from school as compared to those with fewer siblings.

Past studies have associated the use of FP with reduced maternal, infant and child deaths. According to the World health Organizations (World health Organizations, 2012) meeting the unmet demands of FP alone could reduce the global maternal death by almost a third.

Contraceptive Prevalence Rate (CPR) in Kenya is at fifty eight percent and for IUD, the prevalence rate is 3.4 percent for married women (Kenya National Bureau of Statistics, 2015). It is of great importance to understand the IUD use among women seeking FP services. This will lead to increase use of IUD hence reducing unplanned pregnancies and improving the women's health.

Between 1978 and 1998, use of IUD rose from nine percent to thirty nine percent among married women in Kenya. There was a sharp decline of the IUD use from thirty one percent in 1998 to around eight percent in 2003. Seventy percent of women were using pills or injectables and not the IUD. Due to low uptake of IUD, the government came up with a strategy of creating awareness of uptake of IUD (Family Health International, 2006).

1.2 Problem Statement

High fertility rate and low contraceptive use have remained a major problem in Kenya since independence. The total fertility rate in the country is estimated to be 4.6 percent while contraceptive prevalence rate is forty six percent (KNBS, 2015). Despite the

existence of FP programmes initiated by the government and other stakeholders with the aim of reducing the level of fertility and increasing contraceptive use, IUD uptake is still low.

In Kenya, the trends in IUD use show a decline from previous years. According to Kenya Demographic Health Survey reports, IUD use in 1993, 2003 and 2008 was 4.2, 2.5, and 1.6 percent respectively among married women aged 15-49 years, showing a steady decline (KNBS, 2009). In 2014 however, there was an increase in IUD use with 3.4 percent of married women as compared to other family planning methods. Uptake of IUD has not matched the obvious benefits of IUD. Among the most commonly used contraceptives in Kenyan informal settlements, IUD is the least used at four percent compared to condoms (35 percent), pills (33 percent) and injection (19 percent) (Oketch et al, 2011). Despite the fact that preventative predominance has been on the rise from forty six percent in 2009 to the current fifty eight percent, just 3.4 percent of married women in Kenya are as of now utilizing the IUD. According to KNBS (2015), IUD was the least utilized among the married women at 1.6 percent compared to injectables (21.6 percent), pills (7.2 percent), sterilization (4.8 percent) and condoms (1.8 percent) (Alaii *et al.*, 2012). It was also the least preferred method among those who intended to use contraceptive method in future at 1.9 percent as compared to 7.7 percent for implants which is also a long term contraceptive method (KNBS, 2009). This trend in low IUD uptake and less preference by the clients, points to a gap which requires an empirical investigation. Such a study will help us to understand drivers and barriers to IUD uptake.

Primary health facilities in Kenya have been reported to be lacking grossly both in commodities and supplies as well as lack of trained personnel to offer IUD services and this has led to a declining trend in IUD uptake in the region (Mwangi, 2009). However, level four and above public health facilities have regular supplies and are ideal for provision of IUD. The study is therefore limited to level four public health facilities. The data will be collected from Kiambu and Machakos Hospitals, which are high volume, level four hospitals with a high uptake of FP services in the region.

1.3.Research Questions

1. What is the level of IUD uptake among women seeking FP services in Kiambu and Machakos Hospitals?

2. What are the key drivers and barriers to IUD uptake?

3. What are the policy recommendations based on the findings?

1.3.1 Broad Objective

To determine Intrauterine Device uptake among women seeking FP services in Kiambu and Machakos Hospitals.

1.3.2 Specific Objectives

1. To establish the level of IUD uptake among respondent seeking FP services in Kiambu and Machakos Hospitals.

2. To determine the drivers to barriers to IUD uptake

3. To make recommendations based on our findings

1.4 Significance of the Study

The study provides knowledge on drivers and barriers to IUD uptake which will be used to guide policy on increasing the uptake of the method. The findings from the study will be used by decision makers in development of strategies to strengthen the uptake of IUD as a long term contraceptive method. The findings will be useful to County Health Management Teams in their future plans of increasing IUD uptake. Equally the study findings will fill the knowledge on the utilization of IUD and act as a basis for further academic research.

1.5 Scope of the study

The study is based on data collected from two government facilities because majority of Kenyan utilize medical services in public hospital as compared to private hospitals. Machakos and Kiambu hospitals are high volume hospitals whose catchment extends to their neighbouring counties and they are rich in culture diversity.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers both theoretical and empirical literature. Under theoretical we cover theories of consumer demand while under empirical literature we review studies on types and use of IUD, side effects of IUD and uptake of IUD. The study presents literature reviewed on drivers and barriers to IUD uptake, which are related to socio-demographic and reproductive health factors, knowledge and awareness, misconceptions and fears, partner influence, provider influence as well as availability and accessibility.

2.2 Theoretical Literature

2.2.1 Human Capital Theory

Health care is both a consumer good and investment good (Grossman, 1972) based on Human Capital theory. Age, education, health status and income significantly affect the production of health through the demand for health capital. Grossman suggests that the consumer applies health inputs as investment in health capital which later not only improves consumer's health but also maintains his stock of capital. Grossman maintains that the final goal of a consumer is health output demonstrated by healthy days (Grossman, 2001).

This final goal indicates how much time and other resources e.g. money to invest in health stock in order to purchase inputs like contraceptives. Sometimes these inputs may be unaffordable in case of emergencies which leads to increased unmet need and thus increases lack of access to family planning services. Finally, other several factors are claimed to have an influence in households' or individuals' decisions to use contraceptives, including quality of services in health care centers, health care expenditures, individuals income level, education level, age, family size, and number of adults in households among other factors.

2.2.2 Theory of Demand

According to the theory of demand, there is a relationship between consumer demand for goods and services and their prices. Goods and services have wants satisfying capacity known as utility which is a subjective concept. Demand therefore refers to the willingness as well as ability of the consumer to procure and consume the goods and services and is determined by the quantity demanded, price of the good/service, price of substitutes/ complements, consumer income, tastes and preferences of the consumers, level and age structure of the population and the price expectations of consumers for future time periods.

2.3 Empirical Literature

2.3.1 Types and benefits of using IUD

There are two types of IUDs currently available in over 100 countries. The most generally accessible IUD is the Copper bearing IUD (TCu 380A). The other sort is a hormone discharging IUD otherwise called Levonorgestrel Intrauterine System (LnG IUS or IUD). Both sorts are proper for women of childbearing age (15-49 years). It is a modern long acting reversible family planning which is private, easy to use, highly effective and reversible (May et al, 2011). Once IUD has been removed return to fertility is always almost immediate that makes it suitable to be used by all women of childbearing age also those who have never given birth. IUD is ideal after delivery because it does not interfere with breastfeeding activity, and cost effective because it does not require revisits for commodity refills (Melissa *et al.*, 2012).

2.3.2 Side effects of IUD

The side effects of IUD include bleeding, backache and cramping commonly during the first few months of use which can easily be improved upon (Amy et al, 2006). Usually concerns have been raised that IUD increases risk of pelvic inflammatory disease (PID) if they have a sexually transmitted infection (STI) at the time of insertion. Research shows that even in settings of high STI prevalence, the risk of PID in IUD users is very low (Melissa et al, 2012). For example, a modeling exercise from Benin, Burkina Faso, Ghana, Guinea, and Mali, found that the prevalence of Chlamydial and gonococcal

infections was more than four percent the estimated risk of PID was only 0.075 percent (or less than 1 in 1300) among IUD users indicating the side effect is rare (Beekle *et al*., 2006). Other side effects that have been associated with device use include bleeding in the first few months of insertion and backache (Stanback and Shelton, 2008).

2.3.3 Uptake of the IUD

As per United Nation (2012) report, the worldwide figures have come up clearly with IUD variations of utilization across the globe. United Nations (2009) shows that twenty five percent of IUD users are in Asia, trailed by twenty percent in Europe. These extents are reflected by the prevalence of IUD use in China fifty percent of IUD of the global use (United Nations, 2009). Sub-Saharan Africa IUD uptake is about two percent (United Nations, 2012). Kenya at 3.4 percent among married women (KNBS, 2015).

2.3.4 Drivers and Barriers to IUD uptake

Drivers are the factors that support or facilitate uptake of the IUD and they include client knowledge and awareness on the method as well as influence from providers, family members, and partners. Women who are aware of the IUD and its benefits are most likely to use the method as compared to those who are not **(**Espey *et al*, 2003). Barriers are the obstacles or factors that hinder women from using IUD and include fears, rumors, little or lack of knowledge (Melissa *et al.*, 2012). Both drivers and barriers are related to client and service delivery. Studies that have looked at drivers to IUD uptake have highlighted the major themes that include, impact from health care workers, relatives, and spouses (Katherine *et al*, 2011).

2.3.5 Socio-Demographic and Reproductive Health Factors

Socio-demographic factors as well as reproductive health factors can be either drivers or barriers to IUD use. Serawit and Alemayehu (2012) found age and education status to influence uptake of IUD while marital status and religion had no influence on uptake of the method in Ethiopia. History of birth has been found to affect the use of IUD, with those having no children being reluctant to use the method as compared to those who have children (Moreau *et al*, 2007). With the current eligibility criteria, IUD can be used by adolescent and those who have not yet given birth (Ministry of Health, 2008). Mamun

*et al. (*1998) carried out a study to determine the socio demographic and programmatic determinants of FP use and non use among married women and newlywed couples. The study used data conducted in six villages in Bangladesh and a sample of 13,515 rural married women was used. Data was analyzed using logistic regression. Results revealed that the likelihood of using FP was lower in the newlywed and teenagers who had no children compared to those who already had children.

Asiiwe *et al.* (2013) carried out a study to identify the socio-demographic factors associated with family planning use among young women in comparison with older women in Uganda. Data from Uganda Demographic and Health Survey (UDHS) collected in 2006 and 2011 was used in the study. The sample was restricted to non-pregnant married women aged 15-34 who were sexually active within one year of the survey. Sample size was 2,802 in 2006 and 2814 in 2011. Logistic regression model was used to establish the relationship between selected independent variables and the outcome variable (use of modern FP methods). The study revealed that living in rural areas and desire to have more children had a negative effect on contraceptive use among married women aged 15-24 years in both 2006 and 2011. Household wealth, higher education level and the desire to have more children had a positive effect on contraceptive use among women aged 25 and 34 years.

Sileo (2009) sought to identify factors that determine FP use to women who have just given birth in rural Uganda. The study was a cross sectional study which involved 258 women who attended antenatal care in the rural Ugandan hospital. Logit regression model was used to test the hypothesized factors. From the findings education, partner's' influence, prior experience of FP use were identified as key determinants of FP uptake.

2.3.4.2 Misconceptions and Fears

Women who have misconceptions about the method are not likely to use it and usually clients have many misconceptions, fears and rumors about the IUD and its side effects. Fears and concerns about perforation, insertion and infertility have also been found in various studies (Asker *et al*., 2006; Amna and Shaikh, 2013).

2.4 Overview of the literature

From both theoretical and empirical literature review above, education, marital status, age, history of birth and misconception played a major role in women's decision in the uptake of IUD. The review has shown that there is no Kenyan study on the determinants of IUD. Studies that have examined determinants off IUD uptake have majorly been done in other countries. This further confirms that none of the studies has been done in Kiambu and Machakos counties on the utilization of IUD.

Research studies reviewed have shown that increasing access to IUD as a contraceptive method by raising awareness and knowledge on benefits of IUD among both providers and clients can contribute to a significant increase in IUD uptake, reduce unwanted pregnancies and pregnancy-related maternal deaths as well as increase the CPR. This proposed study will improve understanding of the drivers and barriers to uptake of IUD which is an important aspect in the provision of quality services, expansion of coverage and utilization of services.

CHAPTER THREE: METHODOLOGY AND DATA

3.1 Theoretical Framework

The researcher examined the IUD uptake and both drivers and barriers from clients' perspectives and group them into client and service delivery related barriers and drivers. Client related drivers include age, denomination, and perception and, educational level for they have been found to greatly influence the woman's choice of contraceptive method. Client related barriers are factors that have been reported to hinder uptake of IUD and they include religion, occupation, marital status and perception. These barriers and drivers affects demand for IUD which eventually leads to increased or decreased uptake of IUD, thus affecting the Contraceptive Prevalence Rate.

Figure 1. 1: Conceptual Framework

```
┌──────────────────────────┐   ┌──────────────────────────┐
│  Client related drivers  │   │  Client related barriers │
│                          │   │                          │
│  Age, Education,         │   │  Denomination,           │
│  Denomination            │   │  misconception, marital  │
│                          │   │  status, occupation,     │
└──────────────────────────┘   └──────────────────────────┘

Independent variables              Independent variables

              ┌─────────────────────┐
              │    Demand of IUD    │
              └─────────────────────┘
                        │
                        ▼
              ┌─────────────────────┐
              │     IUD uptake      │
              └─────────────────────┘

              Dependent variables
```
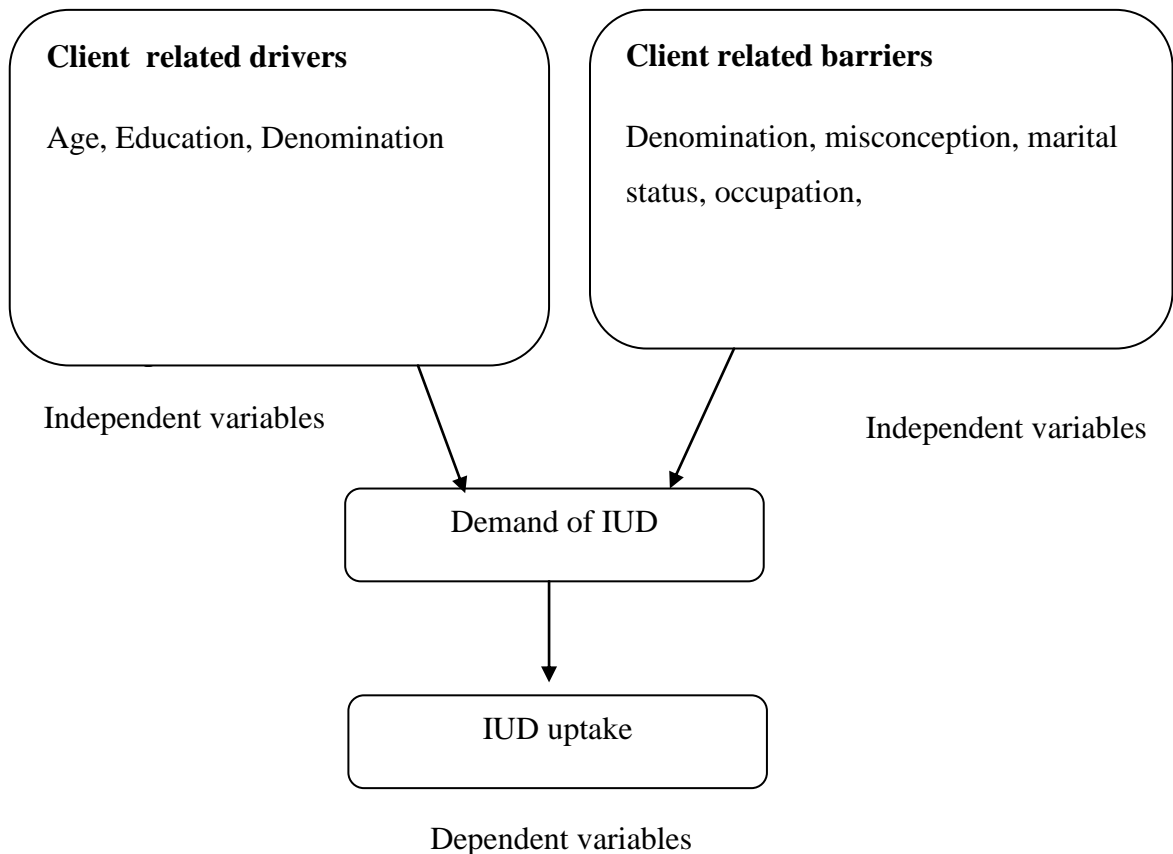
3.2 Analytical Framework and Model Specification

This study used binary logit model to analyze the determinants of IUD use. The choice of Logit model is based on the fact that it gives consistent and precise results when using categorical variables. The dependent variable took the value of 1=IUD use and 0 otherwise. By adopting the logit model an assumption is made that the error term takes a normal distribution.

When the response Y is binary, with the values 0 and 1, the logit equation is;

P = Pr (Y = 1/X) = Φ (X' β)... (1)

Where:

Pr = Probability.

Φ = Cumulative distribution function (CDF) of the normal distribution.

β = Vector of unknown parameters.

X = Vector of known regressors.

Y = Sequence of independent binary variables that take values of 1 and 0.

3.3 Definition, measurement and expected signs of variables

In this study, IUD uptake was presented as a function of a number of variables like age, level of education, marital status, occupation, denomination and perception. This is shown as:

IUD_U= f (Ag; Le; A; Ms; Oc; Dn; Fd ; Pr;)……. (2)

Where:-

IUD_U: IUD uptake

Table 3.1   Description of Variables

Variables	Measurement	Expected sign
IUD-U: Intrauterine Device Use(dependent variable)	Equal to 1 if one is currently using an IUD;0 otherwise	Dependent variable
Le: Level of Education	Two categories were used to measure level of education where 0 = primary and 1 = above secondary (All respondents had at least primary education)	+
Ms: Marital Status	Two categories were used to measure marital status where 1 = married; 0 otherwise.	+/-
Oc: Occupation	Equal to 1 if one is employed (formal or informal); 0 otherwise	+
Dn: Denomination	Three categories were used to measure denomination where 0 = protestant, 1= catholic, 2 = Islam. Protestant was the reference category.	+/-
Ag: Age of Participant	Six categories of age brackets were used:0 =15-20 years;1=21-26 years; 2=27-32 years; 3=33-38 years; 4=39-44 years; 5=45-49 years	+
MSc: misconception	Four categories were used where is 0 = painful during sex; 1 = IUD moving to other body organs; 2 = IUD can case infertility; 3 = IUD dislodged during sex	-

Source: Author's computation

From the above specification, IUD uptake is a binary variable and it takes the values of either 0 or 1. The logit model can then be stated as:

IUD_U= $\beta 0 + \beta 1 Ag + \beta 2 Le + \beta 3 A + \beta 4 Ms + \beta 5 Oc + \beta 5 Dn + \beta 6 Msc + \varepsilon_u$.................. (3)

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3.4 Data Source

The study used cross-sectional qualitative and quantitative data. The data was collected from Kiambu and Machakos Hospitals in the month of September, 2016. Both facilities offer all the FP methods. The two facilities were purposively selected because they are high volume level five government facilities and are the main County Referral Hospitals. According to National FP guidelines (Ministry of Health, 2010), FP counseling and provision of full range of FP methods including the IUD should be done in level four, five and six hospitals. In Kenya, the most common single source of all contraceptives is government Hospitals (KNBS, 2009). In addition the two hospitals serve both rural and a cosmopolitan and multicultural population from the neighboring Nairobi County, which comprises women in their reproductive ages from different social classes.

The survey was carried out among women of reproductive age going for FP in Kiambu and Machakos Hospital. The average monthly attendance of FP clinic is 800 women for the two facilities. The study excluded women seeking family planning services who are unwilling to participate, those who are sick and those who are confirmed pregnant.

Purposive sampling was used to select the study hospitals. Systematic sampling was used to select respondents. The sampling interval was calculated from k=N/n where 'N' is the target population in a month and 'n' is the sample size. For Machakos Hospital k=300/142=2.1 and for Kiambu District Hospital k=500/238=2.1. This is rounded off to 3 giving k[th] value of 3. Upon arrival of the research assistants at the study site on the day of interview, the first respondent was selected randomly from the register of clients waiting to be served at the FP clinic and within the sampling interval. After that, every 3rd client seeking services at that FP clinic was approached with an intention to enroll her into the study. Clear explanation about the study was done after which each client will be asked to sign the consent form voluntarily. The sampling interval provided the research assistants adequate time to complete interviewing one participant before embarking on the next one and thereby maximizing the interview time. Additionally, it was also avoided extended waiting time on the part of the client/patient after receiving the services.

Sample size was calculated using Fishers' formula as quoted by Mugenda and Mugenda (1999). In a context where the target population is more than 10,000 the formula is;

$$n = \frac{Z^2 Pq}{d^2}$$

n= desired sample size

z=standard normal deviate (1.96) that corresponds to 95% confidence level.

p= the proportion in the target population with a specific characteristic (55% CPR)

q=1.0-p

d= the degree of accuracy desired (0.05 was used)

n=1.96^2 ×0.55×0.45/0.05^2

n=380

The sample size was distributed based on monthly target for each facility as shown in Table 3.2.

Table 3.2:   Sample Size Distribution

Facility	Number of clients per month	Proportion of the sample %	Number to be sampled
Machakos Hospital	300	37	142
Kiambu District Hospital	500	63	238
Total	**800**	**100**	**380**

Source: Author's computation

Four research assistants who were recent nurses graduates were recruited and taken through a comprehensive training period before data collection began. Data was collected through administration of questionnaires.

A pretest was done in Ruiru level three hospital that offers IUD in addition to serving a similar study population. This ensured the questions were complete and standardized. Fifteen clients were interviewed using interviewer administered questionnaire and information gathered was useful in ensuring proper flow of questions as well as correction of mistakes.

Data was entered into a spreadsheet (Microsoft excel) and exported into Stata version 14 after where the analysis was done. Descriptive statistics and econometrics were used to analyze and discuss.

Ethical approval was sought from University of Nairobi Ethics and Research Committee. Permission was also sought from National Council for Science, Technology and Innovation (NACOSTI), Medical Superintendent and Head of the Family Planning department in each facility. Informed consent was sought from each respondent on voluntary basis with an assurance of confidentiality.

CHAPTER FOUR : RESULTS AND DISCUSSION

4.1 Introduction

Chapter four presents the results and discussion of the research findings. The results were interpreted and discussed based on the research objective which was to determine Intrauterine Device uptake among women seeking FP services in Kiambu and Machakos Hospital. The findings presentation was done using frequency tables.

4.2 Descriptive Analysis

4.2.1 Response Rate

Out of a population of 380 women who were contacted to participate in the interview 317 respondents agreed to be interviewed. This constituted 83 percent response rate which was considered sufficient for analysis and reporting.

4.2.2 Respondent Location

Table 4.1 indicates the distribution of women respondents by place of location. The findings indicated that a larger proportion of the sampled women (72.9 percent) were from Kiambu, with pre urban setting as compared with   27.1 percent from Machakos with features befitting rural settings. The location of the residence was critical as indicated in the past findings that there existed significant disparities in various aspect of reproductive health feature between the urban and rural people.

Table 4.1   Place of Residence of the respondents

Respondents Place of Residence	Frequency	Percent
Machakos	86	27.1
Kiambu	231	72.9
Total	**317**	**100.0**

Source: Author's computation

4.2.3 Age of the Respondents

 Table 4.2 presents the distribution of the respondents' age brackets. The results show that majority of the respondents (34 percent) were aged between 33-38 years with the minority (four percent) were the age group 15-20 years. The finding concurred with the Demographic Health Survey sample design which target women in their reproductive ages.

Table 4.2   Age of the Respondents

Age Category	Frequency	Percent
15-20 years	14	4.4
21-26 years	35	11.0
27-32 years	51	16.1
33-38 years	108	34.1
39-44 years	80	25.2
45-49 years	29	9.1
Total	**317**	**100.0**

Source: Author's computation

4.2.4 Marital status of the Respondents

Table 4.3 shows the marital status of the respondents. The results show that 58 percent of the respondents were married.

Table 4.3   Marital status of the respondents

Categories of Marital status	Frequency	Percent
Unmarried	183	42
Married	134	58
Total	**317**	**100.0**

Source: Author's computation

4.2.5 Religion of the Respondents

Table 4.4 shows the religion/denominations of the respondents. The results show that majority of the respondents were Catholics (50.8 percent) followed by protestants (37.5 percent) and Muslims comprised 11.7 percent.

Table 4.4   Religion of the Respondents

Religion of the Respondents	Frequency	Percent
Protestant	119	37.5
Catholic	161	50.8
Muslim	37	11.7
Total	**317**	**100.0**

Source: Author's computation

4.2.6 Education level Achieved

Table 4.5 indicates the distribution of respondents by the education. The results indicated most sampled respondents had attained secondary and above (90.9 percent) while 9.1 percent had primary level of education.

Table 4.5:   Education level of the respondents

Education level Achieved	Frequency	Percent
Primary	29	9.1
Secondary and above	288	90.9
Total	**317**	**100.0**

Source: Author's computation

4.2.7 Occupation of the Women Respondents

Table 4.6 shows occupation of respondents. The results show that 96 percent of the respondents were employed.

Table 4.6:   Occupation of the Women Respondents

Occupation of the Respondents	Frequency	Percent
Unemployed	14	4.4
Employed	303	95.6
Total	**317**	**100.0**

Source: Author's computation

4.2.8 Misconception

Table 4.7 shows misconception regarding IUD contraceptive. The results show majority of the respondents forty seven percent believe that IUD moves to other body parts, and another twenty seven percent believes that IUD causes pain during, seventeen percent believes that IUD cause infertitity, while ten percent of the respondents said that they believed it dislodges during sex.

Table 4.7:   Misconceptions of the respondents

Categories of women misconceptions IUD	Frequency	Percent
Painful during sex	86	27
Travelling to other body parts	146	47
Causing infertility	51	16
Dislodging during sex	34	10
TOTALS	**317**	**100**

Source: Author's computation

4.3   Summary statistics

Table 4.8 shows the sample characteristics of the variables used in the regression model. The table shows that about 15 percent of the respondents are currently using IUD. Age variable had five categories and the mean is 3 implying that the mean age of the respondent was in the third category which is 33-38 years. Religion had three categories

with protestant being the reference variable. The mean is 0.7 implying that majority of the respondents were in category 1 which is catholic denomination.

Table 4.8: Summary statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Use IUD	240	0.146	0.354	0	1
Age	317	2.937	1.264	0	5
Religion	317	0.741	0.653	0	2
Misconception	317	2.104	0.924	1	4
Education	317	0.909	0.289	0	1
Marital status	317	0.577	0.495	0	1
Work	317	0.726	0.447	0	1

Source: Author's computation

Misconceptions had four categories and having a mean of 2 where a majority of women believe that an IUD moves to other parts of the body parts after insertion. Education had two categories primary and secondary and above with a mean of 0.909 which means that majority of the respondents had secondary education and above. Fifty eight of the respondents were married while seventy three of the respondents were working

4.3.1 Heteroskedasity Test

The study used Breusch-Pagan to test for heteroskedasticity. The result are shown as below.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: residence marital status religion occupation
chi2(4)   =   179.83
Prob > chi2 =   0.0000

Source: Author's computation

Result from the Breuch-pagan shows that there is no heteroskedasticity since p-value =0.000 is smaller than the p critical of 0.05.This implies that we fail to reject the null hypothesis that variables have a constant variance and conclude that the variables are homoskedasticity.

4.4 Regression Results

Table 4.10 shows regression results of intrauterine Devise uptake.

Table 4.10:   Regression Results Intrauterine Device Uptake

Variable	dy/dx	Std. Err.	P>|z|
Age	0.043	0.025	0.085
Religion	-0.072	0.040	0.069
Misconceptions	-0.074	0.026	0.004
Education	0.072	0.039	0.068
Marital status	-0.126	0.062	0.042
Occupation	-0.239	0.260	0.359

Source: Author's computation

Age

The regression results show that there exists a significant relationship between age of the respondents and uptake of uptake of Intrauterine Device. An additional year in age increases the probability of IUD use by 0.43 holding other factors constant. This implies that the decision to use Intrauterine Device in family planning is significantly dependent on the age of the women. Asiiwe *et al*. (2013) found similar results for Uganda where age was positively related to use of modern family planning method.

Education Level

There is a positive and significant relationship between level of education attained and the Intrauterine Device uptake among women in Kiambu and Machakos in family planning. One unit increase in education increases the probability of use of IUD by 0.072 holding other factors constant This implies that level of education significantly influences

decision to utilize Intrauterine Device in family planning. Studies which found similar results included Espey et al. (2003) and Asiiwe et al. (2013).

Marital Status

The study revealed that marital status has a negative significant influence on Intrauterine Device uptake among women in Kiambu and Machakos. Being married reduces the chances of using an IUD by 0.126 compared to the unmarried. This implies that in a marriage setting, the decision to use or not to use Intrauterine Device as a method of family planning is made based on discussion between husband and wife. Mamun et al;(1998) found a contrary result in Bangladesh where the newlywed and teenagers who had no children were less likely to use FP compared to those who already had children.

Misconceptions

The result shows that there is a negative relationship between perceptions and IUD use implying that misconceptions were a barrier to IUD uptake. Amna and Shaikh (2013) found that most clients who had never utilized an IUD reported to have heard negative information about IUD. Some of these myths and rumors included worries of infertility, offensive discharge, irritation of the genital area, and painful intercourse.

Religion

The results show that religion has a negative significant influence on IUD uptake. Being either a Muslim or catholic reduces the probability of IUD use by 0.072. Catholics and Muslims teachings are against use of FP. They advocate for natural methods or barrier methods. This explains why the uptake of IUD is low among Muslims and Catholics.

CHAPTER FIVE: CONCLUSION AND POLICY RECOMMENDATION

5.1 Conclusions

This study sought to establish the determinants of IUD uptake in Kiambu and Machakos hospitals. It accomplished this by using primary data collected in the month of September 2016 consisting of 317 respondents. It also made use of both descriptive and econometrics methods to analyze the results. Heteroskedasticity test indicated absence of this violation and possible was addressed by using robust standard errors

The study found that age, education, marital status, religion and misconception are significant in explaining uptake of IUD in the two regions. Specifically, older women with higher education were more likely to use IUD compared to younger ones and those with only primary level of education. Further, being a muslim or catholic, being married and having misconceptions about IUD reduces the probability of IUD uptake. Therefore the drivers for IUD uptake are the age and education while barriers are religion, marital status and misconception.

5.2 Policy Recommendations

The study revealed that there was positive and significant relationship between level of education attained and the intrauterine uptake. The study recommends that level of education for women should be enhanced through adult education. In addition, girl child should be supported through bursaries and scholarships to pursue education especially to secondary level.

The study revealed that marital status has a negative significant influence on Intrauterine Device uptake among women in Kiambu and Machakos. The study recommends husbands should be attending Family Planning clinics together with their wives so that they can be educated on the benefits of IUD.

This study found that misconceptions were barriers to IUD uptake. The study therefore recommends that misconception of IUD should be dealt with by creating awareness of the benefits of IUD as a method of contraceptive. This can be done at the family planning clinics.

5.3   Areas for Further Studies

This study collected information demand side drivers and barriers to IUD uptake. However, there are also supply side factors which either enhance or hinder IUD uptake. This study therefore recommends supply side drivers and barriers to IUD uptake as an area of further research.

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APPENDICES

Appendix I: Questionnaire

Section 1: Demographic Information

1. Age of the respondent (in years)

   15-20 years   (1)

   21-26 years   (2)

   33-38 years   (3)

   45-49 years   (4)

2. Residence

   Machakos   (1)

   Kiambu   (2)

3. Marital status

   Single   (1)

   Divorced   (2)

   Widowed   (3)

   Married   (4)

4. Religion

   Protestant   (1)

   Catholic   (2)

   Muslim   (3)

   Other (specify)..........(.4).

5. Education level

    None   (1)

    Primary   (2)

    Secondary   (3)

    College/University (4)

6. Occupation

    Unemployed   (1)

    Casual labourer   (2)

    Self-employed   (3)

    Salaried job   (4)

Section 2: Contraceptive Use and IUD Uptake

7.Are you on any FP method?   Yes (1)   No   (2)   if No skip to Q10

8.If yes in Q7, what is your current FP Method?

    Intrauterine device   (1)

    Pills   (2)

    Injectables   (3)

    Condoms   (4)

    Implants   (5)

    Tubal Ligation   (6)

9.Have you ever used any other FP method(s) Yes (1) No (2) if No skip- Q24.

10.If yes in Q9, Which other method (s) have you ever used?

Intrauterine device   (1)

Pills   (2)

Injectables   (3)

Condoms   (4)

Implants   (5)

Tubal Ligation   (6)

Section 2: IUD use

A. IUD Use

11. Have you ever used IUD before? 1) Yes 2) No

12.. What made you choose IUD? Tick all that apply

Side effects of other methods   (1)

Provider influence   (2)

Partner influence/Advice   (3)

Friends influence   (4)

Family member influence   (5)

Desire to avoid hormonal contraceptives(7)

a) Cost-friendliness   (8)

b) Convenience of use   (9)

c) Others (specify).....................(10.)...

13. Did the provider discuss with you on IUD the first time it was inserted?

Yes (1)   No (2)

14. If yes Q28, which aspects were discussed? Tick all that apply

Types   (1)

Benefits   (2)

Side effects   (3)

Cost effectiveness   (4)

Its placement in the uterus   (5)

Others(specify) -----------------(--6)-

15. How many times have you been inserted IUD? --------------

16. What was the longest time you stayed with the IUD? (in months)------------

17. Are you satisfied with the method?   Yes (1)   No (2)

18. If no, Why? --

General Questions

19. What have you heard other people say about IUD? *Tick all that apply*

Women who haven't had children so far, cannot use IUD   (1)

IUD act as an abortificient (cause abortion)   (2)

The IUD might travel to other body organs   (3)

One can conceive with IUD   (4)

Can cause infertility   (5)

IUD spreads infection in all over the body   (6)

During intercourse, the IUD can cause pain and discomfort   (7)

IUD is dislodged during sex   (8)

Associated with cancer   (9)