

**DETERMINANTS OF CONTRACEPTIVE UPTAKE AMONG YOUTH IN
KENYA: A CASE STUDY OF TURKANA COUNTY**

BY

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DECLARATION

This is my own original work and has never been presented for any degree in any other university for award of degree.

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Signature

Date

Joyce Ncece

This Research Project has been submitted for examination with my approval as university supervisor.

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Signature

Date

Dr. Diana Kimani

DEDICATION

I dedicate this project to my husband for his encouragement and my children for their endurance during my study.

ACKNOWLEDGMENT

I would first of all like to thank the almighty God for seeing me through this journey of my education, during my course work and project.

I would also like to thank my supervisor Dr. Diana Kimani for her perseverance and support throughout my project.

To my course work teachers, thank you for dedicating your time to teach me.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
APHR	Africa Population Health Research
ARHD	Adolescent Reproductive Health Development
CPR	Contraceptive Prevalence Rate
HIV	Human Immunodeficiency Virus
KAIS	Knowledge and Information Systems
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
KNRHS	Kenya National Reproduction Health Strategy
MDG	Millennium Development Goals
MOH	Ministry of Health
NCPD	National Council for Population and Development
NRHP	National Reproductive Health Policy
PSI	Population Services Kenya
SDGs	Sustainable Development Goals
SRH	Sexual and Reproductive Health
TFRs	Total Fertility Rates
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

ABSTRACT

The Kenyan government has been promoting modern methods of contraceptives since independence as championed by the health ministry and some collaborative partnerships. In addition, there are lots of strategies/policies and initiatives put forward by the government to promote the use of family planning services. The measures/steps are meant to lower total fertility rates, raise contraceptive prevalence rate (CPR) and shrink the unmet family planning needs. Unfortunately, available statistics shows that only 36.4 percent of the Kenyan youth use any/some form of contraception. Apart from being ranked among the counties with high Total Fertility Rates (TFRs), Turkana County was shown to have the least prevalence rate of contraceptive use among youth aged 15-35 years which was mainly associated with the inadequate/lack of access to health information. Based on these, this study explored empirically the determinants of contraceptive uptake in Turkana County using the latest Kenya Demographic and Household Survey of 2014. The binary probit regression model was used in estimation. Significance was tested at one percent, five percent and ten percent levels. Both descriptive and econometrics results were presented in tables. The findings revealed that education, marital status, current residence and gender of the household head were significantly associated with contraceptive uptake. The study therefore suggests the need for the government through the relevant ministry to enhance outreach programmes imparting contraceptive knowledge rather than the general knowledge so as to reverse the trends among the married couples and those young women with primary education levels. Finally, increasing government intervention through provision of incentives like gifts to enhance increased access to family planning services and improved responsiveness through continuous research to the client needs will go a long way to maintain utilization of contraceptive by residents in the urban environment as well.

CHAPTER ONE: INTRODUCTION

1.1 Background

Developing countries have made significant strides with regards to investments in their health sectors through lowered costs of medicine, increased availability of medicines and equipment, enhanced trainings for health workers, and establishment of various health facilities across the country; in an attempt to boost their socio-economic health status. Many countries lay much emphasis on primary health care in order to reduce inequities. These include services like vaccination, hygiene, access to safe drinking water and better motherhood inventiveness (WHO, 2010).

On safe motherhood initiatives, birth control methods have been in use even in the ancient times but it is only in the 20th century when contraceptives became more effective, safe and available. Contraceptive is defined as a method in terms of devices or drugs consumed/used by an individual to prevent an unintended pregnancy, i.e. spacing children or permanently preventing pregnancy, as well as control for high fertility (Omondi, 1999; Awiti, 2013). Needless to say, both young and older women resort to abortion to limit their child bearing despite illegality, insecurity and unsafeness of the process (WHO, 2012).

Contraceptives are classified into four categories namely hormonal (pills, injectables, vaginal rings etc.), intra-uterine devices (implantable), physical barriers (condoms) and permanent methods (vasectomy and tubal ligation). In addition, there are other less effective methods like use of spermicidal, withdrawal and lactation amenorrhea. However, about 222 million women globally who are not interested in giving birth are not using the available contraceptive method (Ahmed *et al.*, 2010).

Historically, the growth of Sub-Saharan Africa is meticulously associated to the youth welfare. Actually, over a third of the entire populace is characterised by young people constituting a considerable proportion of populations in sub-Saharan Africa. The unique vulnerabilities and challenges however, of young people are often unaddressed in policies and programmes (WHO, 2012). Some of these challenges include; numerous sexual and reproductive health (SRH) challenges during their transition to adulthood (Bertrand, 1993) which hinders them from contributing to the progress of their surrounding environment. There is also increased likelihood of youth facing both social and economic encounters associated with dawdling development efforts considering strategic failures on investments curbing increased birth rates.

Although the number of births per woman in Sub-Saharan Africa is declining in overall, birth-rates among young people remain high in many developing countries (WHO, 2014a). Most of the pregnancies among young people especially young girls in Sub-Saharan Africa are unintended or mistimed pregnancies. In addition, it is reported that utilization of family planning method in this group remains low (Hill *et al.*, 2003). For example, adolescent girls between the ages of 15 and 19 years giving births account for 16 percent of all births in Sub-Saharan Africa (WHO, 2012).

Evidence shows that young women who are sexually active frequently encounter impediments in accessing contraceptives as well as other health related services. This raises the risk of unintended pregnancy as well as dangerously executed abortions (Hill *et al.*, 2003; Kayongo, 2013). Therefore, young people also require not only services but also information so that they can be associates in averting unplanned pregnancies. Family life education, particularly on contraceptive education is

perceived to be a sensitive issue and the extent to which it is addressed varies from one age category to another, one institution to another as well as from one region to another due to differences in cultural beliefs. Such health actions as using contraceptives are required as a determination to boost actions including dissemination of all forms of contraception information (Donovan and Evans, 2009).

1.1.1 Contraception Policies in Kenya

Since independence, Kenya has been embracing modern methods of contraceptives championed by health sector among other collaborative associates. Considering the Kenya National Reproduction Health Strategy (KNRHS) of 2009-2015, apart from realizing vision 2030, access to reproductive health according to Michuki (2015) was prioritized and ranked as critical towards attainment of the lapsed Millennium Development Goals (MDGs) now Sustainable Development Goals (SDGs). In addition, there are various policies, guidelines, strategies, goals and targets set to guide the provision of reproductive health services. This is also indicated in the Kenya Constitution of 2010 which provided for principal legal structure that ensures a comprehensive rights-based approach to services delivery in health sector (Republic of Kenya, 2010).

The KNRHS sets out various approaches of ensuring access to reproductive health is achieved through strengthening of the health systems, improving efficiency, effectiveness and quality of reproductive health services. Other approaches include increasing access to reproductive health services through the community strategy and targeting groups with special needs (people with disabilities and the “hard to reach”, poor and other vulnerable populations including youth).

The youth contraceptive policy is incorporated in the Adolescent Reproductive Health Development (ARHD) policy which was developed in 2003 (Republic of Kenya, 2007). This was meant to add to the advancement of the welfare and value of life for both adolescents and youth in Kenya. According to the Kenya National Bureau of Statistics- KNBS (2014), 15 percent of women aged between 15 and 19 years previously had a birth whereas 18 percent have started child-bearing (that is they either had a live birth or are pregnant with their first child). The proportion of females who have commenced child-bearing rises fast with age. This increase happens from about three percent to 40 percent among women aged 15 and 19 years. The contraceptive use among this age is still relatively low i.e. 40.2 percent whilst in age 20-24 where most of the youth live is 53.5 percent. The resultant high fertility rate amongst the young people can be associated with the lack of access to required information on reproductive health and supposed unfriendliness by service providers who are short of the right skills for handling reproductive health challenges of the adolescents (National Council for Population and Development, 2015).

Mass media platform has been widely used especially in promoting health programs for the wellbeing of the public and conduct change arena (Kotler, *et al.*, 2009). Such campaigns through mass media seek to influence persons, targeting the approaches and behavior of policy makers and concerned groups (WHO, 2011). In this case, contraceptives have been promoted through various channels like radio, TV and print media to promote the range of products. These have successfully dispelled myths and misconceptions about modern family planning methods. Mass media has also been used to promote correct knowledge about benefits of modern family planning

methods, encourage young people to get involved and embrace modern family planning methods (Shengelia, *et al.*, 2003).

1.1.2 General Overview of Contraceptive Uptake in Kenya

Rapid population growth and high fertility rates have been perceived more as obstacles than stimulants to economic growth and development (Michuki, 2015). Rapid population growth decelerates capital accumulation rate (Schultz, 2008). Patterns of social organization and deeply ingrained cultural values have for decades been associated with the demand for large families leading to sustained high fertility in Africa, (Bertrand, 1993). While the world fertility rate as at 2013 averaged 2.5 children, in Kenya it was 4.6 (World Bank, 2014) which is relatively high. Table 1.1 shows different contraception methods and utilization levels as revealed in the recent Kenya Demographic and Household Survey (KDHS) of 2014. The highest proportion of respondents reported to use modern methods was 35.63 percent followed by non-user at 32.57 percent and those who did not intend to use made up 28.32 percent of the respondents. The findings further show that there has been a decline in use of traditional methods compared to other methods listed.

Table1.1: Use of Contraception and Intention in Kenya (2014)

Contraceptive Use and Intention	Freq.	Percent	Cum.
Using modern methods	5,252	35.63	35.63
Using traditional methods	513	3.48	39.11
Non-user - intends to use later	4,801	32.57	71.68
Does not intend to use	4,175	28.32	100.00
Total	14,741	100.00	

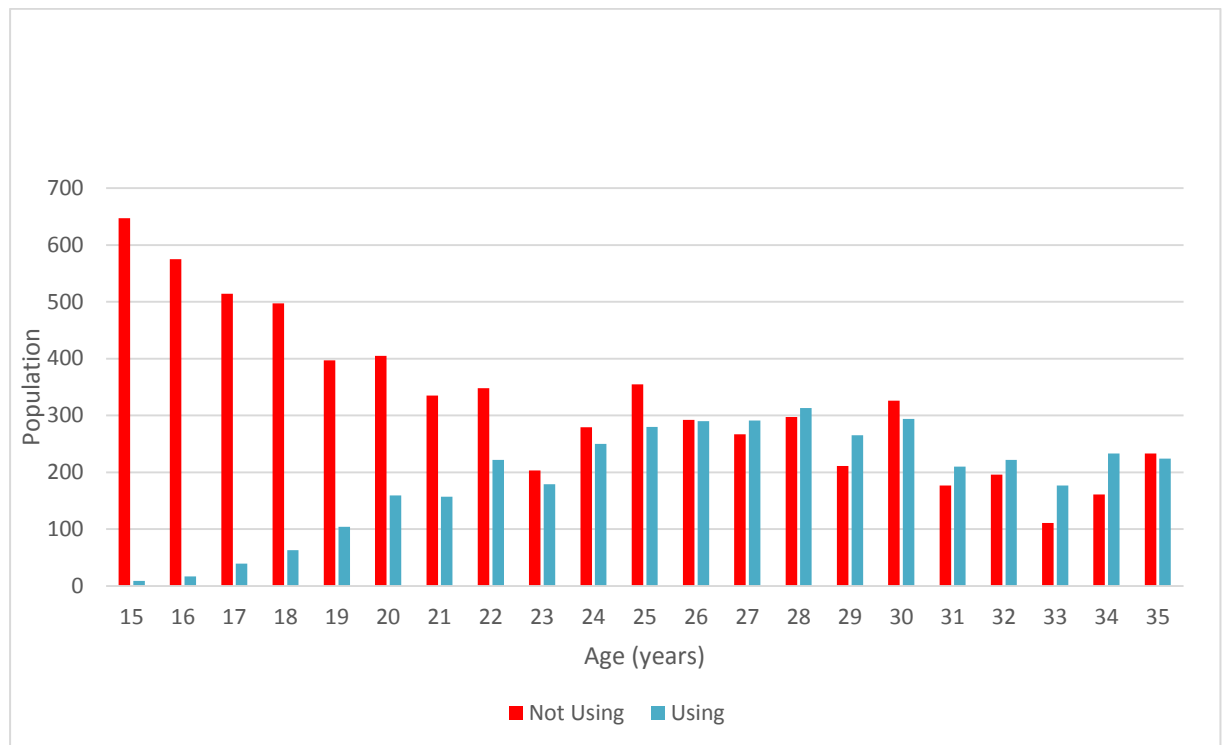
Source: KNBS (2014)

The current level of contraception utilization is used extensively as a success measure for most programmes of family planning (Michuki, 2015). In Kenya, the government through the ministry of health strategized and developed policies meant to boost the use of services for family planning. This consideration was meant to oversee growing contraceptive incidence rate, decreasing the fertility rates and lowering the unmet family planning necessities across the country (Republic of Kenya, 2013). These efforts were as a result of Kenya persistently recording high levels of total fertility rate which remains at 3.9 and contraceptive prevalence rates for entire methods is stagnating at 58 percent, despite the existing policy measures. Hence several factors need to be re-evaluated for appropriate approach as suggested by Aboud (2012) and WHO (2014b).

On the demographics, Kenya is generally a youthful nation with over 60 percent of its population comprising of persons below the age of 25 years thus making the adolescents and youth very important when looking at a nation's development. Further, youths aged between 15-34 years form 35 percent of Kenyan population (National Council for Population and Development, 2015). The available information shows that only 36.4 percent of the Kenyan youth use any/some form of contraception (KNBS, 2014). Majority of youth live in urban setting as a result of migrating from rural areas to seek employment. However the kind of urban environment they stay in is limited in terms of knowledge about contraception as well as access to contraceptive methods (National Council for Population and Development, 2015).

In addition, contraceptive choices among the young people have a huge influence on their schooling, health status, work projections, as well as their general change to maturity. Figure 1.1 shows trends of contraception use among the youth aged between 15 and 35 years.

Figure1.1: Contraceptive uptake among youth in Kenya (15-35 years)



The figure shows that as individuals advance in age, those not using decline and usage rises albeit at a slow rate. However, the disparity is high from younger age (between 15 and 22 years) compared to other age categories (23 and 35 years). Generally, it can be observed that the ratio not using is high in any age category compared to those using.

1.1.3 Contraceptive Uptake amongst Youth in Turkana County

Despite the high number of people infected with HIV (35.3 million globally), there are signs of an increase in risky sexual behaviors in most countries (WHO, 2014b). Kenya however is also experiencing persistent challenges in contraceptive use among the youth which include: poor adherence, inadequate access to high-quality contraceptives, youth-friendly contraceptive, sexual and reproductive education and health services (Michuki, 2015). Turkana County is unexceptional, as it has experienced a steady trend of influx of people in the recent past due to the changing socio-economic landscape, occasioned by the discovery of oil wells in the area as well as influx of youthful population from the neighboring country, South Sudan. This influx may upset the social fabric that has existed among the Turkana community over the period (Johannes *et al.*, 2015).

It is feared that the influx has heightened socio-economic interaction between the people living in Turkana and these entrants, with the number of those who engage in commercial sex going up around the towns. The Turkana community, which traditionally has been governed under the hierarchical system with the kraal leaders having powers to regulate the community behavior, is faced with a new challenge of dealing with immigrants when it comes to sexual behavior. Consequently, Knowledge and Information Systems (KAIS) report of 2012 showed that unwanted pregnancies prevalence among the youth in Turkana County is in the steady increase /=(Johannes *et al.*, 2015). This is clear indication of low contraceptive usage among sexually active population, the majority of which are youth aged 15-34. However, there have been on-going social marketing activities to influence the youth on the use of

contraceptives within Turkana county since 2007 (African Population and Health Research, 2014).

Available information shows that in Turkana County, contraceptive usage among the youth is not proliferating (African Population and Health Research, 2014). According to KDHS of 2014, Turkana was ranked among the counties predominantly from northern Kenya with the lowest contraceptive prevalence rates with 10 percent whereby its counterpart Marsabit had 12 percent. Only 6.67 percent of youths aged between 15 and 35 years in Turkana County were reported to use some form of contraception (KNBS, 2014). This could be attributed to various challenges such as inadequate supply of contraceptives and inadequate knowledge on how to obtain the contraceptives. Thus understanding the determinant of contraceptive usage by the youth in Turkana County may improve consumption of the product in the wake of devolution.

1.2 Statement of the Problem

Generally, unmarried sexually active young people are not intending to become pregnant whereas those married perhaps may not desire to become pregnant at a young age (Kayongo, 2013; Dey and Mishra, 2014). Early pregnancies are associated with high chances of death in childbirth, still births, miscarriages, insecure abortions and maternal deaths especially among the young mothers aged 15-24 years (WHO, 2014a; WHO, 2012; and Awiti, 2013). The Kenyan government has actually invested continuously in Sexual and Reproductive Health (SRH) programs. However, there is a persistent challenge which leads to insufficient information and service needs with

regard to SRH. This is because majority of these pregnancies are associated with low utilization of contraceptives among the youth in Kenya.

Available studies (Kayongo, 2013; Michuki, 2015) associate scarce contraceptive choices to varying quantity and lack of advice from the point of acquisition/purchase as contributing factors. Specifically, studies conducted in Kenya (Lasee and Becker, 1997; Omondi, 1999) were not only conducted before introduction of devolution but over two decades ago and may not be applicable at this time while the study by Magadi and Curtis (2012) and Michuki (2015) never considered specific regions but focused nationally. Actually, contraceptive knowledge dissemination in Kenya has considerably increased contraceptive availability, however actual contraceptive usage in most counties has persistently remained low (Republic of Kenya, 2013; 2015).

Media advocacy has become a conventional health promotion approach (Grilli, *et al.*, 2009). Health information can enhance use of contraception to prevent individuals from being infected with sexually transmitted infections; unintended pregnancy and can also decide when to have children (Aboud, 2012; UNAIDS, 2013). Apart from being ranked among the counties with the high Total Fertility Rates (TFRs), irregular acquisition of contraceptive supplies and inadequate information characterizes the contraceptive service access and utilization by young people in Turkana County (KNBS, 2014). Further, most youth are making a switch from childhood to maturity and entering their reproductive years with a growing need for access not only to health services but also sexual and reproductive health information. It is imperative therefore to conduct an empirical analysis to explore in general factors affecting contraceptive uptake among youth in Turkana County. The study findings reveals

whether or not socio-demographic factors have any role on contraceptives use and whether they lead to any significant change across the county.

1.3 Research Questions

- i. What are the general profiles of youths and their contraceptive uptake in Turkana County?
- ii. What are the determinants of contraceptive uptake by youth in Turkana County?
- iii. What is the appropriate policy interventions on contraceptive usage among youth in Turkana County based on the findings?

1.4 Objectives of the Study

This study aims at analyzing the determinants of contraceptives uptake among youths in Turkana County. The specific objectives include;

- i. To describe the general profiles of youth and contraceptive uptake in Turkana county.
- ii. To investigate the determinants of contraceptives uptake among youth in Turkana County.
- iii. To delineate policy interventions on contraceptive uptake among youth in Turkana County based on the study findings.

1.5 Justification and Significance of the Study

The study recognizes that contraceptive-advancement efforts need to give attention to social norms at community-level, populace patterns as well as informal social interactions and interactive communication. Due to the fact that contraceptives

prevent early pregnancies or unwanted pregnancies, the incidences may decrease hence a healthy community, which is needed for stable market for other health products.

This study therefore may provide reference for the researchers in the academic arena who will be seeking additional information to help them refocus their investigations. Findings from this study may also be used by the Government of Kenya to have a wider range of communication strategies to implement while considering various aspects of marketing to give priority in enhancing the uptake of contraceptives among the youths in Turkana County as well as the Country at large. More specifically, the findings may be useful in guiding the health ministry when considering communication and advocacy actions in the counties. Input from this study could be used as a guideline for establishing comprehensive promotion models based on the Turkana context and other counties in similar settings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section explores theoretical and empirical literature on aspects relating to contraceptive usage and the expected relationship with mass media. Overview of the study is thereafter provided with gaps to be filled.

2.2 Theoretical Literature Review

2.2.1 Consumer Demand and Utility Maximization

The theory assumes that consumers have rational behavior, have preferences and are faced by a budget constraint and therefore must make decisions about what they buy based on their limited budget. To maximize utility, marginal utility should be the same for each good or service a consumer buys. Demand and consumption functions, are therefore, derived from utility maximization. The demand by the consumer for a good is a resultant of the utility maximization as expressed by the Lagrangian equations (Schultz, 2005). Solving the first order conditions yields the marshallian demand functions.

A satisfactory explanation is provided from the demand theory for many goods and services such that what is demanded by consumers when they purchase medical services is better health and not these services per se (Grossman, 2001). This study builds on utility maximization model to analyze the determinants of contraceptive uptake.

2.2.2 Behavioral Health Model

The process of health care service utilization is put into the setting of socio-cultural and economic essentials. This model was proposed focusing on predisposing factors; enabling factors; and need factors. According to Philips *et al.* (1998) the model is anchored on factors that influence process of making decision and taking into account economic situation, travel coverage (distances), education levels, individual satisfaction based on previous services utilized and perceived quality of services. To build on this model, other social, administrative, environmental, topographical and monetary aspects that seem to touch peoples' health are necessary (Maina, 2006).

However, Pokhrel and Sauerborn, (2004) argued that considerations need to be provided to household/individual and/or health systems level features. Thus the prompts for health service consumption are influenced by either political, social, economic and/or cultural factors as perceived/defined by either the individual or the community. In this case, contraceptive uptake by youth involves a certain evaluation of health care service use leading to acknowledgement of the significance of the determinants of health.

2.3 Empirical Literature Review

Kayongo (2013) conducted a study to evaluate the use of contraceptives and the factors which influence its utilization among youths aged between 15 to 24 years within Busia district, Uganda. The study employed descriptive cross sectional method of analysis and logistic regression analysis. Sexually active youth were involved in the study. From the results, the large percentage (62 percent) of those surveyed were utilizing modern contraception whereas others (56 percent) search for contraceptives

from government health amenities. Specifically, condom was the most used method (71.7 percent), followed by Depo-Provera (31.8 percent). Actually, gender and marital status were significantly associated with condom use whereas age and marital status statistically and significantly affected use of Depo-Provera. The study further showed that providers had fallacies about contraceptives and undesirable attitudes towards the delivery of contraceptives to youth.

A study on the sex without consent focusing on youth in third world countries found that insufficient information with regard to contraception and in what way to acquire health services is among the other reasons why many young women in the adolescent stage in emerging economies are especially susceptible (Jejeebhoy, *et al.*, 2005). The authors show that limited know-how on contraception brings doubts, gossips and mythologies on methods of family planning and can stop young people from looking for contraception.

A study done in Bolivia by Velasco (2001) analyzed the nexus between communication and contraceptive prevalence among women. It employed binary probit model in its estimation and found out that gender determined usage of contraceptives. It indicated that women expressing bigger panic when being served by a male service provider. The study further revealed that other demographic features like age of an individual as well as marital status contributed in determining the use of contraception. The author concluded that scarcity of female/women providers may hinder access to contraceptive services by women.

Shengelia, et al., (2003) in their analysis of advertisement indicated that social marketing through mass media (TV, radio, print such as newspaper advertising, Internet etc.) thrives mostly in changing population health behavior. They found out that, generally advertising has positively influenced smoking behavior and contraceptive usage as well as communication intermediaries' like awareness, approaches and principles related to these actions. On the other hand, Snyder and Hamilton (2002) considering advertising campaigns found that the average campaign accounted for nine percent of the disparity in health risk behaviour change, whereas the non-coercive campaigns advocated for only five percent of a behavior change.

A study conducted in Ghana established that women who selected to use contraception risked societal isolation or family encounters (Adongo, 1997). The study focused on traditional aspects compelling the introduction and use of family planning among the community. It was found that in other areas, women require permission from their husbands to visit a health facility or to travel alone. This contributed to either secret or restricted contraceptives use.

Despite the associated benefits of advertisement to individual or societal wellbeing as described by Donovan and Evans (2009), Saini and Mukul (2012) identified that intangible concepts, such as changes in ideas, attitudes and lifestyles were incorporated in campaigns. As such the 'price or costs of change addressed were the perceived obstacles. Furthermore, in Zambia, the Ministry of Health as described by Agha (1998) indicated that the Total Fertility Rate (TFR) dropped by 0.4 (6.5 to 6.1) due to increased utilization of family planning as a result of the rise in modern methods.

Lasee and Becker (1997) used KDHS data of 1989 in exploring both knowledge and approval of family planning in Kenya. The study adopted multiple logistic models in estimation. The study findings showed that the desire for more children, communication between husband and wife, knowledge and approval of FP and size of the family are significantly related to the uptake of family planning. Similarly, lack of adequate knowledge amongst young people regarding contraception led to misunderstanding of FP methods thus preventing them from seeking contraception. Following Jejeebhoy *et al.* (2005), insufficient information on contraceptives as well as how to acquire services that are health related is among the explanations why many young females in the adolescent stage in developing countries become vulnerable community.

Magadi and Curtis (2003) conducted a study on the tendencies and factors leading to contraceptive choice of method in Kenya. The investigation was grounded on the three sets of Kenya Demographic and Health Surveys (KDHS) data collected in 1989, 1993 and 1998. The study employed multilevel multinomial models for the multivariate analysis. The determinants of method chosen have been fairly constant over time; only urban and rural differences in method choice differed significantly. The disparity in choice of different types of methods by educational accomplishment was insignificant, though the highly educated (secondary or higher) were the more likely to use long-term methods compared to those with no formal education who were most likely to use traditional methods.

A study conducted by Ayiga and Kigozi (2016) examined access to and uptake of contraception by women with disabilities in Uganda. The study used cross-sectional data on 1128 sexually experienced women in the 15-49 year age group. The data were obtained from the 2011 Uganda Demographic and Health Survey. The study employed a binary logistic regression model in estimation. It was found out that only 26.1 percent of the women had ever used contraception and the results confirmed the hypothesis that access to health facilities and access to family planning information on radio significantly increased uptake of contraception. Attending four or more antenatal care visits, being in the 25-34 year age group, living in Kampala region, having primary, secondary or higher education, being in the middle or richer wealth index groups and having almost daily access to radio were among other factors that significantly increased uptake of contraception.

Chepkorir (2014) employed binary probit regression model to investigate factors influencing utilization of maternal health care services among the rural women in Kenya. The study utilized Kenya demographic and household survey (KDHS) of 2008. The dependent variables used were antenatal care, hospital delivery and postnatal care. The analytical findings indicated that age of the individual, size of the household members and birth order are significant factors which influenced utilization of hospital delivery. Gender of the head of the household also influences usage of antenatal care and postnatal care positively and significantly. On the other hand, place of residence significantly reduce utilization of both hospital delivery and postnatal care whereas women in higher wealth index had lower utilization of both antenatal care, hospital delivery and postnatal care.

Michuki (2015) undertook a study to explore factors that determine contraceptive usage in Kenya using KDHS of 2014. The study employed binary probit regression model. The model was used in the estimation of the demographic and socio-economic variables that influence uptake of contraception. From the estimation results, it was found out that age of the woman, exposure to maternal education, level of household income (wealth index), cultures and beliefs, and level of access to information (via mass media) were statistically significant determinants for contraceptive uptake among women in Kenya.

2.4 Overview of the Literature Review

From both theoretical and empirical literature reviewed on contraceptive usage across the countries and in Kenya indicate that both demographic determinants for example age of an individual, their marital status, gender and socio-economic factors such as educational attainment, occupation, wealth quintiles among others as significant determinants of contraceptive usage (Lasee and Becker, 1997; Magadi and Curtis, 2003; Jejeebhoy *et al.*, 2005; Kayongo, 2013; Chepkorir, 2014; Michuki, 2015; Ayiga and Kigozi, 2016). Further, both in Kenya, Uganda, and Bolivia being a female, high socio-economic status, high academic achievement, effective communicator, and attitudes towards contraception were strongly found to be significant in prediction of contraception use (Lasee and Becker, 1997; Kayongo, 2013; Michuki, 2015). However, problematic areas still remain. For example, uptake of contraceptive is persistently lower compared to the level required to make an important impression on the early/unwanted pregnancies endemic due to increased poor communication in remote, and resource poor settings not necessarily those residing in the urban areas (Velasco, 2001; Jejeebhoy *et al.*, 2005). Therefore, there is need to investigate

determinants that may influence the community consumption of contraceptives among young people especially those who perceive themselves to be isolated such as residents of Turkana county. Both multinomial logit, probit and ordinary least square (OLS) methods have been used in estimation of the models. This study adopts binary probit model. Recent data for KDHS 2014 is to be used to give the appropriate information since it has all the variables of interest for households residing in Turkana County.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents overall description of the theoretical framework, model specification, definition and measurement of variables and finally data sources.

3.2 Theoretical Framework

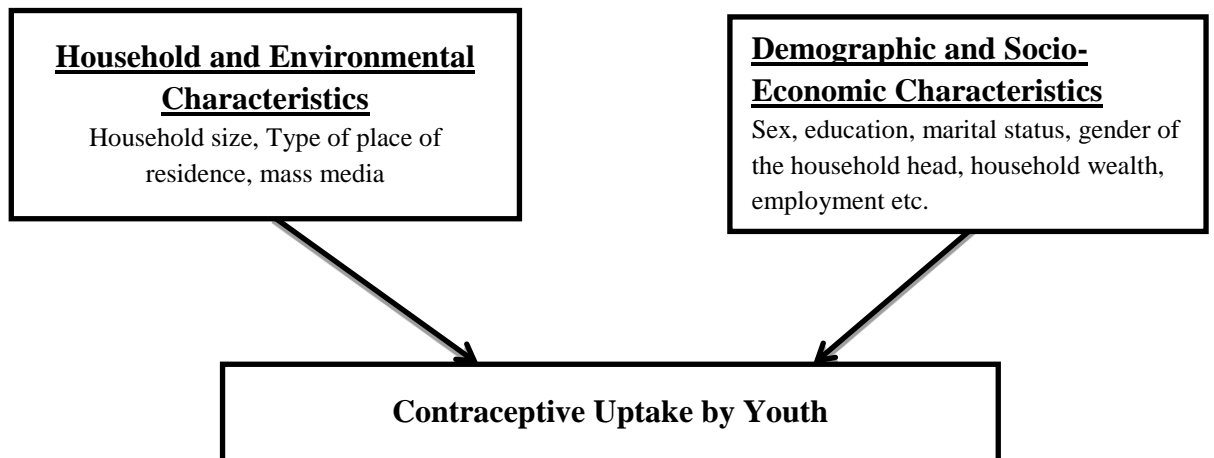
Contraceptive uptake among young people is determined by interaction of many factors that are complex at different service delivery levels (individual, social and/or reproductive health). This was confirmed in the model proposed by Anderson, (1968) and consists of predisposing factors; enabling factors; and need factors. Individually, some of the suggested determinants include age, educational levels and information on contraception do influence uptake of modern contraceptives. Similarly, on social aspect; traditional customs, marital status, spouse backing, gender roles that are designated and the need/desire for bigger family impact the conception of individual choices. In addition, other facets of pressures from peers; religion as well as policy influences on the freedom of choice for a contraceptive method.

In relation to uptake of contraceptives, the demand for the contraceptives is derived from the demand of children. An increase in prices of other goods would increase the demand for children due to the substituting effect from consumption goods to children but this would lead to less income left for spending on all inputs on the utility function thus increasing the cost of producing children (Okurut *et al.*, 2013). This would counteract the substitution effect and lower the demand for children. Generally, it is expected that young women (who would want to delay child-bearing) and those who

would want to definitely stop childbearing would use contraceptives more than the newly married women who have just began childbearing (Michuki, 2015).

In addition to Anderson (1968) behavioral model, Kayongo (2013) suggests for inclusion of factors that are associated with delivery of reproductive health service which includes; skills and attitudes of the providers, side effects per method, readiness/convenience of methods, easiness of use as well as accessibility of contraceptive method. These are shown to either act directly/indirectly to usage of contraception. Figure 3.1 below shows the dependent and independent variables.

Figure 3.1: The Framework for Uptake of Contraceptives



However, to investigate the determinants of contraceptive uptake among youth, the study conducted an econometric estimation as described in the next sub section.

3.3 Econometric model and Model Specification

Based on both the analytical frameworks, the study explored the effect of various factors on contraceptive usage by youths in Turkana County by employing binary

probit regression model which lies on an interval of between 0 and 1. This is a probabilistic distribution from where we interpreted the probability of either using or not using any contraceptive method. The study made an assumption that the error term takes a standard normal distribution. Since we cannot observe the latent variable y^* , similarly its variance (Greene, 2008). However, there exists a linear relationship between the unobservable variable y^* and explanatory variables (X_i) represented as:

$$y^* = X_i\beta + \mu \dots\dots\dots 1$$

Where y^* is unobserved/latent variable, X_i is a pool of independent variables; β are parameters to be estimated and μ is the random error term. From equation 1 we linked unobservable variable y^* to the observed binary variable y as expressed below;

$$y = \begin{cases} 1 & \text{if } y^* > \tau \\ 0 & \text{if } y^* \leq \tau \end{cases} \dots\dots\dots 2$$

Where y is the probability of using contraceptive services by youth in Turkana County. It is equal to 1 if one utilizes or has ever used any contraceptive service and 0 if otherwise; τ represents the threshold beyond which one is said to have utilized contraceptive services. Since probit model makes an assumption that the distribution is normally distributed with a mean of zero and a variance of one, we estimated the marginal effects, in order to interpret the results of the probit model. This reflects the change in the probability of experiencing an event that is usage of contraceptive services by youth in Turkana County, given a unit change in any of the explanatory variable. In specifying our model, we used a general multiple analysis to explore the effect of various socio-demographic factors on usage of contraceptive services. The general model was represented as follows;

$$Y_i = \beta_0 + \beta_1 X_s + \varepsilon_i \dots\dots\dots 3$$

Where Y_i is dependent variable that is ever used contraceptive services as shown in the theoretical framework while X_s are the explanatory variables, (like; education, household size, residential status, household size, gender of household head, autonomy and access to mass media) and ε_i is the error term.

3.4 Definition of variables, measurement and predicted signs

Table 3.1: Definition and measurement variables

Variables	Measurement	Predicted sign
Dependent Variable		
Contraceptive use by youth	Youth aged 18-35 years residing in Turkana county who has ever used any contraceptive method =1 and 0 otherwise	
Independent Variable of interest		
Education dummies	(0 = No Education is reference category) Primary level = 1 Secondary level = 2, Tertiary level = 3	Positive sign. Additional years of schooling are linked with higher incomes and a higher value of time.
Employment	Equal to 1 if employed (formal or informal); 0 otherwise	Positive sign. Employed youths are expected to use contraceptives as they are even provided at work place
Marital Status	Marital status=1 if married, 0 otherwise	Positive sign if married
Household size	Members of one family under one household head	Positive sign from those with large family size.
Residential status	Equal to 1 if one is a resides in urban area and 0 if rural	Positive sign if one is a resident of urban area
Gender of head of household	Gender=1 for household headed by male, 0 for female headed household	Negative sign by male headed households
Autonomy	Decision; 1 if woman independently makes her own decision on her health, 0 otherwise	Positive by women decision makers on health matters
Mass Media	Equal to 1 if one frequently listens to a either radio, watch TV or reads newspapers; 0 otherwise	Positive sign. The frequency of watching a television, listening to radio, or reading the newspaper is expected to increase the probability of using contraceptives.

Source: Author's computations

3.5 Data Source and Type

The study used Kenya Demographic Household Survey (KDHS) 2013/2014 which is a national sample survey. The survey targeted 40,300 households and provides detailed information on many health aspects across each of the 47 counties in Kenya. This survey is done after period of five years. It has information at county and national levels in Kenya. This data has information on general health status of the people of Turkana County. Further the survey collected data on contraceptive uptake i.e. (ever used any contraceptive method). It also assessed on respondents demographic, socioeconomic and geographical aspects.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1. Introduction

This chapter presents the descriptive statistics as well as an exploration of correlation and empirical estimates. The study employed Stata statistical software with the use of the binary probit model in econometric estimation of the determinants of contraceptive uptake among youths in Kenya.

4.2. Descriptive Statistics

In describing contraceptive uptake among the youths in Turkana County with the respective determinants, the study considered mainly average, range and standard deviation. As indicated in Table 4.1 below, a total of 1769 respondents were surveyed in Turkana County with total youth being 761. Specifically, the study considered usage of contraceptive as the dependent variable and the socio-demographic determinants as independent variables. The demographic and socio economic variables include; marital status, education levels, place of current residence, sex of household head, employment status, household size, autonomy of the respondent and access to mass media.

Based on the findings, approximately 43 percent of the population in Turkana County was made up of the youth with approximately nine percent utilizing contraceptive with a standard deviation of 45 percent. Furthermore, 55 percent of the respondents were married with 36 percent residing in urban area.

Table 4.1: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Contraceptive Uptake	359	0.086	0.281	0	1
No education	761	0.7543	0.431	0	1
Primary education	761	0.191	0.393	0	1
Secondary education	761	0.042	0.201	0	1
Higher education	761	0.013	0.114	0	1
Employment status	359	0.295	0.457	0	1
Married	761	0.552	0.498	0	1
Place of current residence	761	0.363	0.481	0	1
Household size	761	5.360	2.180	1	12
Gender of household head (1=male)	761	0.407	0.492	0	1
Autonomy	761	0.180	0.384	0	1
Mass Media	761	0.126	0.332	0	1

The study also revealed that 19 percent and four percent of the respondents had primary and secondary/above secondary education respectively, while 75 percent had no education. Therefore, majority of the respondents had less than primary education level. The average household size was six members whereby the household with the largest size had 12 members and the lowest had one member. The study also found that approximately 41 percent of the respondents came from male headed households and only 30 percent of the youths were reported to be employed. It was further shown that 18 percent of the respondents were autonomous in terms of decision making with regard to their own health. Approximately, 13 percent had access to mass media considering the frequency of watching a television set or reading newspapers, and/or listening to a radio.

4.3 Diagnostic Tests

4.3.1 Correlation Analysis

Correlation matrix was undertaken to establish the relationship between contraceptive uptake and independent variables of the study. The positive and negative signs in the analysis are indicative of the direction of association between variables. From Table 4.2, contraceptive uptake was found to be negatively correlated with marital status and autonomy whereas other variables including mass media exhibiting a positive correlation. Other correlations are as indicated in the correlation table below. Since all the correlation coefficients were less than the threshold of 0.6 in absolute, multicollinearity is deemed absent.

Table 4.2: Correlation Matrix

Variables	Contraceptive Uptake	Educational Levels	Employment status	Married	Place of current residence	Household size	Gender of household head	Autonomy	Mass Media
Contraceptive Uptake	1.000								
Educational Levels	0.424	1.000							
Employment status	0.171	0.176	1.000						
Married	-0.169	-0.209	-0.045	1.000					
Place of current residence	0.218	0.394	0.038	-0.114	1.000				
Household size	0.031	0.162	-0.084	0.086	0.299	1.000			
Gender of household head	0.187	0.082	-0.058	-0.041	0.152	0.236	1.000		
Autonomy	-0.037	-0.178	0.309	0.450	-0.084	0.077	0.030	1.000	
Mass Media	0.268	0.518	0.011	-0.084	0.347	0.170	0.258	-0.112	1.000

4.3.2 Normality test

The study undertook a normality check of the distribution of the residuals/error term.

Table 4.3 indicates the results.

Table 4.3: Shapiro Wilk test of normality

Variable	Observations	W	V	z	Prob>z
Contraceptive Uptake	359	0.945	13.801	6.214	0.000
Educational Levels	761	0.947	25.989	7.976	0.000
Employment status	359	0.993	1.826	1.426	0.077
Married	761	1.000.	0.060	-6.901	1.000
Place of current residence	761	0.998	0.827	-0.464	0.679
Household size	761	0.980	9.801	5.588	0.000
Gender of household head	761	0.999	0.444	-1.986	0.976
Autonomy	761	0.990	4.974	3.928	0.000
Mass Media	761	0.983	8.368	5.201	0.000

The results show that the data used was normally distributed in some variables such as employment status, marital status, place of current residence, gender of the head of the household as their p values were more than 5 percent and 10 percent levels of significance that led to failure to rejection of the null hypothesis of normality of the residuals. Contraceptive uptake, educational levels, household size, autonomy and mass

media were not normally distributed. Non normality of some variables is however expected in such dynamic data sets as the one employed in this study.

4.3.3 Heteroscedasticity Test

Heteroscedasticity implies variation of the residuals across all the observations under study. The study used the heteroscedasticity probit model test to determine variation. The results are as shown in Table 4.4.

Table 4.4: Heteroskedastic probit model test

Number of observations	359
Zero outcomes	328
Nonzero outcomes	31
Wald chi2(8)	20.96
Prob > chi2	0.0073
Log likelihood	-80.113
Likelihood-ratio test of lnsigma2=0: chi2(1) = 0.96 Prob > chi2 = 0.3280	

From table 4.4, the overall p-value for the heteroskedastic probit model is less than significant level of 5 percent. Considering the full model with heteroscedasticity against the full model without it, led to inconsistent variance. This is shown by the likelihood-ratio test with a chi2 of 0.05 indicating presence of heteroscedasticity with the fitting full model having fewer iterations compared to fitting probit model. Robust was applied in the final estimated model to address the varying variance.

4.4. Regression/ Probit Model Estimation

4.4.1 Introduction and Interpretation

Probit model was applied in the study to estimate the influence of various factors on contraceptive utilization among youth in Turkana County, Kenya. To summarize the effects of the independent variables on the dependent variable, marginal effect was examined. Findings are tabulated in Table 4.5 below. The study found a p value of 0.000 which was less than 5 percent with the log likelihood ratio of -64.411 implying that the variables considered fit the model well hence variables used in the model were jointly significant in explaining contraceptive uptake in Turkana county. The pseudo R was low 38.98 percent. This is normal for cross sectional studies. From the results of the model, having secondary education as well as high education, being employed, being married and gender of the head of the household were found to be statistically significant in determining contraceptive uptake among youth in Turkana County.

On the other hand, having primary education, place of current residence, household size, autonomy of the youth and access to information were shown to be statistically insignificant at all significance levels. Table 4.5 below indicates more details of marginal effects of the probit model of various independent variables.

Table 4.5: Marginal Effects of the Probit Model

Contraceptive Uptake	Marginal Effects	Std. Err.	P>z
Educational Levels			
Primary	-0.046**	0.018	0.013
Secondary	0.368**	0.154	0.017
Higher level	0.437**	0.194	0.024
Employment status	0.034	0.021	0.103
Marital Status (Married=1)	-0.087***	0.033	0.009
Place of current residence	0.059**	0.028	0.038
Household size	-0.006	0.006	0.295
Gender of household head	0.054**	0.026	0.038
Autonomy	0.049	0.030	0.101
Mass media	-0.002	0.040	0.959
Probit Regression(Robust)			
Number of observations = 359			
LR chi2(10) = 132.85			
Prob > chi2 = 0.0000			
Log likelihood = -64.4116			
Pseudo R2 = 0.3898			

*****Significant at 1 percent, **Significant at 5 percent**

Specifically, secondary education, higher education, place of current residence and gender of the household head have a positive and significance association with contraceptive uptake while primary education level and marital status had a negative and significance relationship. The next section is a discussion of the significant determinants.

4.4.2 Discussion of the Probit Regression Results

From Table 4.5 above, the study indicates significant values at 1 percent, 5 percent significance levels. All education levels were statistically significant in determining contraceptive uptake. Considering the level of education, at 5 percent significance level, the study showed that secondary and higher education levels compared to those with no education significantly increases the probability of contraceptive uptake by 36.84 percent and 43.74 percent respectively holding other factors constant. This implies that youth with these levels of education have the capacity of comprehending messages on contraceptives available and their role in improving their health.

The findings concur with the results of Magadi and Curtis, (2003) who explored tendencies and factors leading to contraceptive choice of method in Kenya. Their findings revealed that the highly educated (secondary or higher) were the more likely to use long-term methods compared to those with no formal education who were most likely to use traditional methods. On the contrary, these findings revealed that primary level of education lowers the probability of contraceptive uptake by 4.56 percent at 5 percent holding other factors constant. Further, Michuki (2015) while investigating factors that determine contraceptive usage in Kenya found that exposure to maternal education was statistically significant in determining contraceptive uptake among women in Kenya.

Marital status was found to be a significant factor that lowers the probability of using contraceptives among youth in Turkana County. The likelihood of a married youth using contraceptive(s) declines significantly at 1 percent level by 8.7 percent holding other

factors constant. This may be as a result of trust among the married couple who do not see any need to use perhaps condom or even any other method of contraception. The findings differs with the study results obtained by Kayongo (2013) who evaluated the use of contraceptives and the factors which influence its utilization among youths aged between 15 to 24 years within Busia district, Uganda. The finds revealed that marital status was significantly associated with contraceptive (condom) use significantly.

The study found out that place of residence led to a significant increase in contraceptive uptake among youth in Turkana County. Specifically, respondents who stay in urban areas had higher likelihood of contraceptive uptake at 5 percent by 5.89 percent holding other factors constant. Urban residents may have had a positive relationship with contraceptive uptake mainly due to the increased exposure and the fact that they may be associated with higher socioeconomic class. This result concurred to the findings of Ayiga and Kigozi (2016) who examined access to and uptake of contraception by women with disabilities in Uganda. The authors revealed that living in Kampala region (urban area), was among other factors that significantly increased uptake of contraception in Uganda.

Lastly, the study sought to establish the contribution of gender of the household head on contraceptive uptake in Turkana County. The study found that youths from households headed by males had high probability of using contraceptives compared to female-headed household. It was shown that at 5 percent level of significance, male headed household led to 5.4 percent rise in contraceptive uptake holding other factors constant.

Despite this being against our apriori expectation, this may be associated with the increased outreach activities and other forms of information disseminations that are mostly attended by men who happen to be head of households say through chief barazas on matters pertaining to contraceptive use in Turkana.

The study findings are contrary to results of Velasco, (2001) who concluded that scarcity of female/women providers may hinder access and thus utilization of contraceptive services by women. Finally, Kayongo (2013) also revealed that gender was significantly associated with condom use in Busia district, Uganda.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter explores the study findings, policy recommendations of the determinants of contraceptive uptake among youth in Turkana County, Kenya. Also areas to be considered in further studies are provided.

5.2 Summary and Conclusions of the Study Findings

The study reviewed theoretical and empirical literature to establish the determinants of contraceptive uptake among youth in Kenya. From the literature, contraceptive uptake is indicated as a perennial challenge which is persistent. Based on this, the study pursued factors behind utilization of contraceptives by youth in Turkana County. Kenya Demographic and Household Survey (KDHS) of 2014 which contains factors associated with contraceptive uptake. The probit regression model has been employed in estimation. The dependent variable used was contraceptive utilization while the independent variables used include: marital status and education levels, place of current residence, gender of the household head, employment, household size, female autonomy and access to information.

At one percent, and five percent significance levels, the study findings revealed that having primary education, secondary education as well as high education level, being married, place of residence and gender of the head of the household were found to be statistically significant in determining contraceptive uptake among youth in Turkana

County. Of the significant determinants, only marital status and primary level of education had a negative and significant relationship with contraceptive uptake. On the other hand, employment status, household size, autonomy and mass media/access to information were shown to be statistically insignificant predictors at all significance levels. In conclusion, to improve uptake of contraceptive, there is a need to consider the study findings obtained and indicated to be statistically significant.

5.3. Policy Recommendations

Based on the study findings where education levels had significant relationship with contraceptive usage, there is need of the government to increase access to both secondary and higher education levels especially to the hardship areas (like northern part of the country) since youth with these levels of education have the capacity of comprehending messages on contraceptives available and their role in improving their health. Complementary to education apart from learning materials should also be provided that can encourage participants to stay in school like previously there was milk in primary schools. There is need for outreach educative programmes that should be enhanced and oriented towards imparting contraceptive knowledge rather than the general knowledge. This is due to the significant contact created with health services in determining unmet need. Similarly, the use of advocacy through implementing partners should be encourage so that the trends could be reversed among the married couples and those young women with primary education levels who had negative relationship with contraceptive uptake.

Secondly, there is need for the government to re-introduce and emphasize on a National Reproductive Health Programme as the one adopted in the year 2007. Such kind of programme is likely to address any existing pervasive structural inequalities in access to contraception services. This is because the study found out that young women in urban areas had high chance of increasing usage of contraceptive uptake compared to those in rural areas. The said program will aim at enhancing the reproductive health status of all Kenyans by increasing equitable access to reproductive health services; improving quality, efficiency and effectiveness of service delivery at all levels and; improving responsiveness to the client needs. This should be escalated to the male headed households who were shown to have higher likelihood of utilizing contraceptive.

5.4. Areas of Further Study

The study has mainly considered role of contraceptive uptake among youth in Turkana county using a cross sectional data. Various factors were considered in the study as indicated in the methodology section, however, other factors such as environmental factors as well as (wealth quintiles) were not considered as employment status was captured instead. Therefore there is need to include these factors in future studies as well as include other datasets over time relating with other independent factors. Also there is need for comparative study with other counties considered in future studies due to dynamic nature of other regions.

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