# A STATISTICAL APPLICATION OF REGRESSION ANALYSIS TO INVESTIGATE AND DETERMINE THE FACTORS THAT INFLUENCE THE UPTAKE OF FAMILY PLANNING IN SOUTH IMENTI SUB COUNTY - MERU COUNTY

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## ABSTRACT

Family planning is one of the mitigation factors adopted by the Kenyan Government in achieving its strategic development goals through reducing child mortality and maternal mortality, thwarting unwanted pregnancies, prevention of STDs, promoting education and the economic empowerment of women. Despite many advantages of family planning, its utilization and adoption in Kenya is still low. Unwanted pregnancies, premature deliveries, illegal abortions and maternal mortality have all resulted from a low uptake of family planning. The low application of family planning methods has been associated with low awareness of existence of family planning methods, lack of information about various forms of family planning methods, negative attitude toward some family planning methods due to lack of counselling/sensitization to mothers on their side effects, difficulty in assessing the family planning services by some rural women, religious beliefs and fear of not being able to bear children again. South Imenti is a Sub County in Meru County associated with low uptake of family planning services despite being offered free of charge in all government clinics. Statistics from the recent census done in the year 2019 indicate that there are more young girls aged between 15-24 years with children, which indicates that teenage pregnancies are rampant. This implies that the uptake of family planning resources is still very low despite numerous sensitization programs. The goal of this study was to apply binary logistic regression method to examine factors that impact on the usage of family planning methods in South Imenti sub-county. The target population was 9,900 women between the ages of 15 and 49. A total of 385 mothers were chosen using stratified simple random sampling for this survey. The study used descriptive and binary logistic regression methods of analysis. The explanatory variables included education level, age, marital status number of children born, Religion, Occupation, household income and frequency of listening to media. In conclusion, the application of binary logistic regression model on the data collected showed that age, education level, marital status, number of children and frequency of mothers in following media were potential explanatory variables that have a significant effect on the utilization of family planning practices.

**Key terms:** Family planning, uptake of family planning, religion beliefs

## INTRODUCTION

According to the United Nations, an estimation of the world population by November 2020 was 7.8 billion. This has become a global concern since many countries are experiencing challenges in sustaining their population growth. Kenya is one of the developing nations where population has doubled in the last 25 years (United Nations, 2009). Furthermore, the country

has a youth age structure in which 45% of the population is underage of 18 years and with high fertility and low use of contraceptive suggesting that the country's population is projected on a continuous growth.  According to the South Imenti development Plan report of 2022-2027 the total population of the sub county is 210,900 people. The report further indicates that South Imenti is one of the highly populated Constituencies in the Country and the population is on a continuous growth.

A study done by Kenya Demographic and Health Survey (KDHS2019) shows that knowledge, levels of education, parity (total number of children existing), socio-economic status of the childbearing mothers and site of residence are the primary drivers of family planning uptake in Imenti South - sub county. Further, to develop an effective fertility measure control, there is need to understand other factors which are related to high fertility rate in South Imenti and provide education services to address these factors. This study therefore proposes to apply regression analysis to investigate and determine other factors apart from those studied by KDHS2019, that influence the uptake of family planning methods in South Imenti Sub County with a view of giving out the recommendations of the study findings to relevant authorities in South Imenti to educate mothers on the usage of family planning methods.

## Statement of the problem

After independence Kenya was swift in adopting family planning policies and strategies in view of managing its population growth to promote the country's social economic development. One of the government's policies towards achieving vision 2030 includes National Population Policy for Sustainable Development. This policy aims at enhancing quality life for Kenyans by controlling population growth to maximally benefit from the resources available. However, Kenya's population growth rate is still very high at 1.98% according to Kenya National Bureau of statistics (KNBS, 2022). A population increase will result in the society suffering problems related to social, health, economic and financials. South Imenti Sub-County not being exceptional, has a high fertility growth rate and equally suffers the effect of high population growth rate. This implies that family planning methods uptake is not being practiced in South Imenti. The problem is to identify the factors which influence the non-uptake of family planning in South Imenti sub county by applying regression analysis.

## Research Objectives
The specific objectives included;
  i.    To apply regression analysis to investigate the social-cultural factors that influence women aged between 15-49 years in South Imenti Sub County's use of family planning methods.
  ii.   To apply regression analysis to determine the demographic factors that influence women aged between 15-49 years in South Imenti Sub County's usage of family planning methods.
  iii.  To apply regression analysis to establish the economic factors that influence women aged between 15-49 years in South Imenti Sub County's use of family planning methods.

### Null hypothesis

i. **Ho:** In South Imenti Sub County, religion does not influence use of family planning methods among women aged between (15-49 years).

ii. **Ho**: In South Imenti Sub County, education does not influence use of family planning methods among women aged between (15-49 years).

iii. **Ho**: In South Imenti Sub County, frequency of listening to media does not influence use of family planning methods among women aged between (15-49 years).

iv. **Ho:** In South Imenti Sub County, marital status does not influence use of family planning methods among women aged between (15-49 years).

v. **Ho**: In South Imenti Sub County, household income does not influence use of family planning methods among women aged between (1 5-49 years).

vi. **Ho**: In South Imenti Sub County, age does not influence use of family planning methods among women aged between (15-49 years).

vii. **Ho**: In South Imenti Sub County, number of children a mother has does not influence use of family planning methods among women aged between (15-49 years).

### Significance of the study

Through application of regression analysis, the study will determine factors that influence uptake of family planning among women of age between (15-49 years) in South Imenti. Based on the findings, the results will assist South Imenti in formulating policies that will encourage utilization of family planning methods hence curbing high growth rate of population growth. The study findings will also inform the relevant groups to educate or sensitize on usage of family planning methods through chief barazas, churches and marketplaces.

### LITERATURE REVIEW

### Empirical Review

According to United Nation's world family planning (2022) report, the number of childbearing women aged between 15-49 years rose from 1.3 billion in 1990 to 1.9 billion in 1921 which is 46% increase. The report also indicates that due to this increase in number of childbearing women, there was a much larger increase in number of women in demand of contraceptive use for family planning purposes. The demand for contraceptive use rose from 0.7 billion in 1990 to 1.1 billion in 1921 which is 62% increase. This demand is continuously being catered for by the modern contraceptive methods. The report also indicates that due to increase in contraceptive usage, total fertility declined globally from 3.3 to 2.3 births per woman. According to World Health Organization, the number of women of childbearing age 15-49 years who need family planning methods has increased from 73.6 percent in 2000 to 76.8 percent in 2021. These modern family planning methods includes contraceptive pills, injectables, vaginal rings, implants, Intra uterine devices, patches, male and female sterilization, withdrawal, and fertility awareness-based methods among others.

According to UN, Kenya and Rwanda are the most known countries with high prevalence rate of accessing and using contraceptives. Ethiopia and Rwanda made the most rapid gains in CPR between 2000 and 2010, increasing by more than thrice, from 8% and 17% to 29% and 53%, respectively. In addition, contraceptive usage declined in Tanzania and Uganda in the mid-2000s and equally in Rwanda following the catastrophic 1994 genocide. Kenya was in 1967, the first SSA nation to foster a strategy on family planning program.

A study done by Kenya Demographic and Health Survey (KDHS2019) shows that knowledge, levels of education, parity (total number of children existing), socio-economic status of the childbearing mothers and site of residence are the primary drivers of family planning uptake in Imenti South Sub County. The KDHS study did not investigate other factors that determine uptake of family planning such as Marital status, media exposure, education of husband, type of employment and work environment. This study seeks to investigate these factors and determine to what extent they influence the uptake of family planning in south Imenti among women of age between 15-49 years. The findings of the KDHS 2019 are as here below.

*Knowledge:* "Knowledge of contraception is widespread in Imenti Sub County," according to the KDHS 2019 family planning chapter, with over 96 percent of presently married men and women knowing at least one method of birth control. Over 80% of women were aware of female sterilization, IUCD, injectables, and the pill; approximately two-thirds were aware of withdrawal and LAM; nearly half were aware of male sterilization and rhythm technique; a third were aware of implants, and only a quarter of women were aware of emergency contraception. Unfortunately, just 26% of people employ current family planning methods.

*Education*: "Preventative use has a good link with schooling across the board, and take-up increases with level of training, notably for young ladies/ladies training," says one researcher. According to the KDHS 2019, CPR in Imenti South rose from about 30 percentage among women without an education to 41% among women with a basic or intermediate education, and 44% amongst females with a high school education or higher.

*Place of residence*: Married women living in urban areas mostly utilize contraception (45%) as opposed to those living in rural regions. Aside from this, in rural regions, 31% married women use contraception. In metropolitan regions, 15% of women use condoms, whereas in rural areas, just 6% of women use condoms.

*Socio-economic status wealth*: The wealth of a household grows, and so does family planning usage to only 21% of women in lower income quantiles.

*Parity*: According to KDHS 2019 statistics, a positive association exists in relation to factor of contraceptive usage and number of children. A high percentage of women with no kids used contraceptives, relative to 29% of women with one or two children who use contraceptives.

## Conceptual framework

The factors that were examined in the study of contraceptives services utilization are listed in this section.

**Independent variable**                                         **Dependent variable**
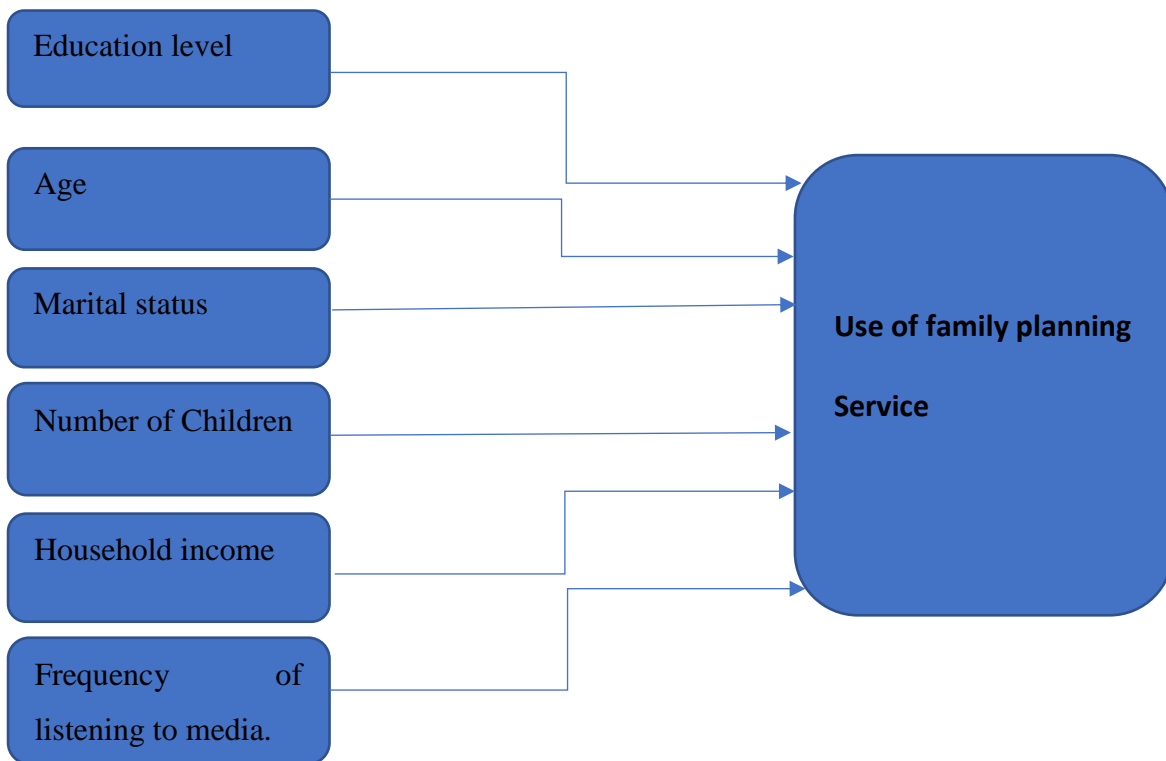


*Figure 1. 1: Conceptual Framework*

## RESEARCH METHODOLOGY

### Research design and target population

Quantitative and Qualitative research designs were used. Respondents comprised of females who responded to the questionnaires with the focus or intention to use or not use family planning methods. The study targeted 9,900 women between the ages of 15 and 49 who are of childbearing age. A sample of 385 females were chosen at random from the target population.

### Sample procedureand Sample size

To determine the sample size, Yamane (1967) Simple random sampling formula was applied. The formula is as shown below:

$$n = \frac{N}{\{1+N(e)^2\}} \, , where$$

*N=Population size*
*n= Sample size*
*e= level of precision*

With the study population consisting of 9,900 women and assuming 95% level of confidence, the required sample size will be:

**n=9900/ {1+9900*(0.05*0.05)} =385**

The population was stratified by locations and the sub samples from the locations with the location population size are as presented below

Sample Size per location table.

| Location | Population | Sample allocation |
|----------|-----------|-------------------|
| Abogeta | 1240 | 48 |
| Igoji | 1400 | 55 |
| Igoki | 1340 | 52 |
| Kanyokine | 1240 | 48 |
| Mikumbune | 860 | 33 |
| Mitiine | 1450 | 56 |
| Mitungu | 1200 | 47 |
| Nkuene | 1170 | 46 |
| **Totals** | **9900** | **385** |

## Research instrument

Simple structured questionnaires were used in gathering the data. It was vital to analyze data collected using appropriate statistical methods after obtaining the data. The analysis entailed data coding and data adjustment for effective analysis by the SPSS software. Assessing the relationship between variables and drawing inferences was done. Binary logistic regression model applied. The data was summarized using tables, graphs, and charts.

## Descriptive statistic and Inferential Statistics

In descriptive analysis frequency distribution tables and cross tabulation tables were used. Under frequency distribution table, the data indicated the frequency or the percentage of respondents using family planning and the percentage not using family planning. The same data was presented using a pie chart.

The study applied linear and nonlinear models, probity and logistic regression models to establish the explanatory variables that explain family planning uptake. Specifically, the study applied binary logistic Regression because the dependent variable is measured on a dichotomous scale i.e., "using" or "not using" and the independent variable is categorical in nature as well as continuous. The study also applied Omnibus test of model coefficients to test significance levels of model coefficients. Additionally, the Homers and Lemeshow test was applied, to test the goodness of fit for the fitted logistic regression model. The Binary logistic

regression table was used to present the analyzed data using SPSS. The data is presented in columns where beta(B) indicates model coefficients, while Exp(B) represents the Odds Ratio.

## Chi Square Tests

The Chi-square test was used to evaluate if there was any significant relationship between,

 i.  Religion and use of family planning methods among women aged between (15-49 years).
 ii.  Education and use of family planning methods among women aged between (15-49 years).
 iii.  Frequency of listening to media and use of family planning methods among women aged between (15-49 years).
 iv.  Marital status and use of family planning methods among women aged between (15-49 years).
 v.  Household income and use of family planning methods among women aged between (1 5-49 years).
 vi.  Age and use of family planning methods among women aged between (15-49 years).
 vii.  Number of Children a mother has and use of family planning methods among women aged between (15-49 years)

The testing was done on the null hypothesis Ho: There is no significant relationship between dependent and independent variable at 95% confidence level. If P<0 we reject null hypothesis and conclude that there is a significant relationship between dependent and independent variable

The chi square test formular used was:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \, ,$$

Where;

$X^2$ is Chi square test statistic.

r is number of categories of the independent variable.

c is number of categories of the dependent variable?

O is the Observed frequency.

E is the expected frequency.

## Odds ratio

The Odds Ratio is a measure indicating the odds that an outcome will occur given a particular exposure, as compared to the odds of the outcome occurring without that exposure. If OR=1 this means the probability of falling in the target group is equal to probability of not falling in the target group. If OR>1 this means the probability of falling in target group is greater than the probability of not falling. If OR<1, it means that the probability of falling in target group is less than the probability of not falling. Odds of an event happening is given by:

$$Odds = \frac{P(A)}{P(A')} = \frac{P(A)}{1 - P(A')}$$

Odds of an event is equal to probability of the event occurring, divided by the probability of the event not occurring.

The logistic transformation given by

$$Ln(Odds) = Ln\left(\frac{P(A)}{1 - P(A)}\right) = Ln\left(\frac{p}{1 - p}\right) = Logit\ p$$

links the observations on the binary variable to the linear function of the independent variables. Thus

$$Logit\ p = B_0 + B_1 x_1 + B_2 x_2 + \ldots + B_k x_k + u\ )$$

Log(odds)=Logit (P) $= \ln\left(\frac{P}{1-P}\right)$ then a regression equation was added to the independent variables to get the following logistic regression equation.

Logit(P) $= b_0 + b_1 x_1 + b_2 x_2 \ldots \ldots$

## Model fit

## Likelihood ratio test

Likelihood ratio test is a statistical test in regression analysis for comparing goodness of fit of two models. It involves the chi-square difference between the null model (i.e., model with only the constant) and the model containing predictor variables.

$$G = -2ln\frac{l_0}{l_1} = -2(\ln l_0 - ln l_1)$$

Chi square test was used to test the null hypothesis Ho: There is no significant difference between the null model (constant) and the model containing predictor variables. If P value <0.05, we reject null hypothesis and conclude that we have enough evidence that the model containing predictor variables is better than the null model. This implies that the model containing predictor variables, fits the data significantly better than the null model. The less the P- Value, the higher the evidence that the null hypothesis is not true.

## Wald test

Wald test is used to determine whether a predictor variable is statistically significant or not. It is calculated by dividing the maximum likelihood estimate (MLE) of the slope parameter (B1) by the estimate. If the test indicates that the P-Value is greater than 0.05, we fail to reject the null hypothesis, and conclude that the coefficient of the variable under consideration is zero hence omitted from the model. It assumes the following Chi-square distribution $W_j = \frac{\beta_j^{\ 2}}{SE_{\beta j}^{\ 2}}$

## RESULTS

### Analysis of binary logistic Regression results

Under this section, the binary logistic regression results, significance and impact of each of the explanatory variable present on the response variable are presented.

*Table 1: Omnibus test of model coefficients*

|  |  | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 42.836 | 8 | .000 |
|  | Block | 42.836 | 8 | .000 |
|  | Model | 42.836 | 8 | .000 |

The above table shows the model that comprises of all predictor variables. All the values shown in the Omnibus Tests of Model Coefficients are given under Chi-Square column as 42.836 which shows significance at 0.05. The model is significantly different from a constant. Therefore, we conclude that adding the predictors variable to our model improves the ability to predict family planning use. Likelihood ratio test is considered as the most common method of assessment of the overall fit in logistic regression model, which is regarded as the chi-square difference between the null model (i.e., with only the constant, whose Chi square statistic is 522.004) and the model that has the predictor variables.  In the Model Summary table below, it is evident that adding the predictor variables reduced the -2Log Likelihood statistics by 522.004 - 479.168 = 42.836.

*Table 2: Goodness of fit Model Summary*

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 479.168[a] | .105 | .142 |

Cox & Snell $R^2$ and Nagelkerke $R^2$ is a logistic regression coefficient of determination ($R^2$). From the above table, Cox and Snell $R^2$ is 0.105. This implies   that the explanatory variable explains the 10.5% of variation occurring in the dependent variable. Nagelkerke $R^2$ in table above is 0.142, This shows the explanatory variable explains 14.2% of variation occurring in the dependent variable. The formular for coefficient the formular for coefficient of determination ($R^2$) is given as follows.  $R^2 logistic = \frac{(-2LL\ null - 2LL\ k)}{(-2LL\ null)}$  Where the null model is the logistic model with only the constant and the k model with all independent variables in the model.

*Table 3: Hosmer and Lemeshow Test*

| Hosmer and Lemeshow Test | | | |
|---|---|---|---|
| Step | Chi-square | df | Sig |
| 1 | 21.040 | 8 | 0.01 |

The above table shows P-value = 0.01 which is less than the level of significance α=0.05. We therefore reject the null hypothesis which states that "There is NO significant difference between the null model (constant) and the model containing predictor variables, at 95% confidence level" We therefore conclude that the model containing predator variables is significantly better than the null model.

*Table 4: Binary logistic regression results*

| | | | | | | | 95.0%C.I for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | d.f | Sig. | Exp(B) | | |
| **Age** | | | **10.877** | **4** | **.012*** | | | |
| 15-24 | 3.041 | 1.326 | 5.25 | 1 | .002* | 20.93 | 1.56 | 282.46 |
| 25-34 | 1.112 | 1.216 | 5.26 | 1 | .107 | 3.04 | 0.09 | 10.92 |
| 35-44 | .153 | 1.065 | 0.00 | 1 | .037* | 1.17 | 0.14 | 9.41 |
| +45) | .155 | 1.022 | 0.02 | 1 | .004* | 1.17 | 0.16 | 8.67 |
| **Husband education** | | | **14.488** | **3** | **.002*** | | | |
| Primary | 5.103 | 2.413 | 4.47 | 1 | .001* | 164.51 | 1.4531 | 18,745. |
| Secondary | 1.223 | 2.11 | 0.34 | 1 | .094 | 3.40 | 0.054 | 213.14 |
| higher | 3.661 | .392 | 87.22 | 1 | .006* | 38.90 | 18.074 | 84.10 |
| **Mother education** | | | **8.872** | **3** | **.034*** | | | |
| Primary | 5.233 | 5.331 | 1.25 | 1 | .035* | 187.35 | 0.06 | 24,906 |
| Secondary | 3.223 | 2.224 | 0.16 | 1 | .056 | 25.10 | 0.00 | 6,379.0 |
| higher | 0.224 | 2.221 | 1.35 | 1 | .013* | 1.25 | 4.84 | 58,459 |
| **Marital status Single** | | | **12.65** | **3** | **0.004*** | | | |
| | | | | | | 39.33 | | |
| Married | 3.672 | 3.288 | 8.129 | 1 | .783 | | 3.13 | 495. |
| Divorced | 1.472 | 3.716 | 0.076 | 1 | .028* | 4.36 | 2.055 | 46.35 |
| windowed | 6.273 | 5.396 | 4.843 | 1 | .023* | 530.07 | 2.781 | 21373.76 |
| **Religion** | | | **6.355** | **2** | **.313** | | | |
| Protestant | .071 | .372 | 0.04 | 1 | .087* | 1.07 | 0.52 | 2.23 |
| Catholic | .108 | .218 | 0.25 | 1 | .621 | 1.11 | 0.73 | 1.71 |
| **Income<5000** | | | **24.331** | **4** | **.482** | | | |
| 5000-15000 | .522 | .233 | 5.02 | 1 | .013* | 1.69 | 1.07 | 2.66 |
| 15001-25000 | .278 | .305 | 0.83 | 1 | .011* | 1.32 | 0.73 | 2.40 |
| 25001-35000 | .092 | .310 | 0.09 | 1 | .765 | 1.10 | 0.60 | 2.01 |

| Above 35000 | -.344 | .208 | 2.74 | 1 | .132 | 0.71 | 0.47 | 1.07 |
|---|---|---|---|---|---|---|---|---|
| **Work enviro.** | | | **55.99** | **2** | **.006*** | | | |
| Poor | .137 | .539 | 0.06 | 1 | .040* | 1.15 | 0.40 | 3.30 |
| Good | .729 | .603 | 1.46 | 1 | .0312 | 2.07 | 0.64 | 6.77 |
| **Type of Employment** | | | **23.3435** | **6** | **.082*** | | | |
| Govt employ | -.128 | .257 | 0.25 | 1 | .698 | 0.88 | 0.53 | 1.46 |
| Self-employ | -.573 | .395 | 2.10 | 1 | .816 | 0.56 | 0.26 | 1.22 |
| Housewife | -.133 | .476 | 0.08 | 1 | .069* | 0.88 | 0.34 | 2.23 |
| **Media exposure** | | | **12.316** | **4** | **.034*** | | | |
| Non | .213 | .113 | 3.55 | 1 | .073 | 1.24 | 0.99 | 1.54 |
| Rarely | .487 | .332 | 2.15 | 1 | .003* | 1.63 | 0.85 | 3.12 |
| Once a week | .321 | .365 | 0.77 | 1 | .002* | 1.38 | 0.67 | 2.82 |
| Every week | .687 | .209 | 10.80 | 1 | .384 | 1.99 | 1.32 | 3.00 |

## Interpretation of Logistic Regression Analysis

From table 4.3.6 above, B column indicates the Coefficients of each independent variable. Exp(B) column shows the odds ratios for each independent variable. Significant column indicates the P- Values for the coefficients of the independent variables. When you look at the results for AGE, there is a significant overall effect (Wald=10.997, df=4, p<0.05). The Coefficients for AGE categories (except 25-34) are significant and positive, indicating that increase in age is associated with increase in the odds of using family planning. For example, age group 15-34 (p-value = 0.002) which is less than 0.05, indicating that it added significantly to the model. Age group 25-34 (p-value is 0.107) that is greater than 0.05, indicating it didn't add significantly to the model.

## Coefficient and Odds Ratio

## Family planning use and Age

One unit increase in age (15-24 years) will increase use of family planning by 3.014 holding other variables in the model constant. The odds of mothers who were using family planning in the age interval 35-44 is increased by 1.17 as compared to the age interval 15-24 years (Coefficient = 0.153, OR=1.17, P=0.037, CI= [0.14, 9.41]).

## Use of family planning and Education

One unit increase in Primary education level by women will increase use of family planning by 5.233 holding other variables in the model constant. The odds of women using family planning in higher levels of education is increased by 187.35 as compared to those who are illiterate (Coefficient = 5.233, OR=186.35, P=0.035, CI= [0.06, 24,906]).

The odds of family planning usage among women whose husbands had primary education is increased by 3304 in comparison to those whose husbands are in illiterate (Coefficient = 5.103, OR=164.51, P=0.001, CI= [1.5, 18,745]).

## Family planning use and marital status

One unit increase in Married Women will increase use of family planning by 3.672 times holding other variables in the model constant. The odds of women who were using family planning and married is increased by 39.33 as compared to those who are single. (Coefficient=3.672, OR=39.33, P=0.783, CI= [3.13, 495])

## Family planning use and Religion

One unit increase in women who are protestant, will increase use of family planning by 0.071 holding other variables in the model constant. The odds of women who were using family planning and are protestants is increased by 1.07 as compared to Catholics. (Coefficient=0.071, OR=1.07, P=0.013, CI= [0.52, 2.23])

## Use of family planning and Income

One unit increase in income (5000-15000) will increase use of family planning by 0.522 holding other variables in the model constant. The odds of women who were using family planning with income between 15001-25000 is increased by 1.69 as compared to those who income is less than 5000 (Coefficient=0.522, OR=1.32, P=0.013, CI= [1.07, 2.66])

## Use of family planning and work environment

One unit increase in poor work environment will increase use of family planning by 0. 137 holding other variables in the model constant. The odds of women who were using family planning in poor work environment is increased by 1.15 as compared to good environment (Coefficient=0137, OR=1.15, P=0.04, CI= [0.4, 3.3])

## Use of family planning and Type of employment

One unit increase of Government employed women will decrease use of family planning by 0.128 holding other variables in the model constant. The odds of women who were using family planning and are housewives is decreased by 0.877 as compared to those employed by government (Coefficient=-0.128, OR=0.877, P=0.069, CI= [0.53, 1.46])

## Use of family planning and listening to media

One unit increase in media exposure to women who rarely listen to media, will increase use of family planning by 0.487 holding other variables in the model constant. The odds of women

using family planning method and rarely listen to media, is increased by 1.63 as compared to those who don't listen at all (Coefficient =0.487, OR=1.63, P=0.003, CI= [0.85, 3.12])

From the study findings, one can now be able to deduce factors that determine family planning use in South Imenti Sub-County. Results indicate, about 59% of the respondents don't use family planning methods. The most important variables identified in the binary logistic regressions are age, marital status, education, Religion, Income, Wealth and frequency of listening to media.

## Conclusions and Recommendations

### Conclusions

The findings have indicated the factors that influencing use of family planning in south Imenti sub-county. These are age, education level, marital status, number of children and frequency of mothers in following media. 24They all have a significant effect on the utilization of family planning methods. Results have also shown that majority of women (59%) were not using any form of family planning. The findings indicate that at the age bracket of 15-34 years, there are still many women not using family planning. Similarly, many women above 35 years are not using family planning methods which calls for more sensitization of women especially those that are sexually active.

### Recommendations

This study recommends formulation of a policy by the County Government of Meru whose aim is to encourage husbands and mothers in South Imenti Sub County engage actively in family planning education programs. These programs could be conducted through the media. The policy should also aim at encouraging husbands and mothers to listen to the media more frequently.

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