

**UPTAKE OF HEALTH INSURANCE AMONG PATIENTS
ATTENDING PUBLIC AND PRIVATE HOSPITALS IN EMBU
COUNTY, KENYA**

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of Public Health of Kenyatta University**

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DECLARATION

This thesis is my original work and has not been submitted for a degree in any other institution.

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DEDICATION

I dedicate this work to my husband Mr. Nyaga and my daughter Edna for their support and inspiration during my work.

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OPERATIONAL DEFINITIONS

Insurance- A promise of compensation for specific potential future losses in exchange for a periodic payment

Health Insurance- is insurance against the risk of incurring medical expenses

Premiums- The amount paid or payable, often in installments, for an insurance policy.

Out-Of-Pocket payments- direct outlays of cash which may or may not be later reimbursed

Private health insurance cover-This is an insurance plan provided by the employer or through a union or purchased by an individual from a private health insurance company.

Employment-based health insurance-This is health insurance offered through one's own employment or a relative's employment.

Public health insurance cover-A type of health insurance that provides services to certain low income individuals and families who meet some specific requirements. Also includes Social health insurance schemes where the policy holder is obliged to insurance by the intervention of a third party who in most cases is the government.

Hospital- A health care institution that has an organized medical and other professional staff, and inpatient facilities, and deliver medical, nursing and related services 24 hours per day, 7 days per week (WHO).

Private hospital- a hospital operated for profit, owned by a profit company or an individual and funded through payment for medical services by the patients.

Public hospital – a hospital owned by the government and receives government funding.

Uptake- making use of something that is available

LIST OF ABBREVIATIONS

AAR - African Air Rescue

CBHI- Community Based Health Insurance

CDC- Center for Disease Control

NHIF- National Health Insurance Fund

NHIS- National Health Insurance Scheme

OECD- Organization for Economic and Development

OOP- Out-Of-Pocket

S-CHIP- State Children's Health Insurance Program

SHI- Social Health Insurance

SPSS- Statistical Package for Social Sciences

WHO- World Health Organization

NACOSTI- National Council for Science and Technology

JBHI- Jamii Bora Health Insurance

ABSTRACT

Health insurance has been considered as key to achieving universal health care by various countries. This is with the aim of ensuring that every citizen should have access to needed healthcare services that are effective and of acceptable quality and that no one should risk financial ruins as a result of illness. However, recent statistics still indicate that in Kenya, currently 26.6% of total health expenditure is out of pocket. Out-of-pocket spending on healthcare has been found to drive the poor into more poverty and poses a barrier to their access to healthcare. This study aimed at determining the uptake of health insurance among patients attending public and private hospitals in Embu. The objectives of the study were to determine the extent of uptake of health insurance among patients attending public and private hospitals in Embu County, to determine the factors influencing uptake of health insurance, the preferred type of health insurance scheme between private and public health insurance and the level of satisfaction for those already having health insurance cover. The independent variables in this study were socioeconomic factors, the available health insurance providers, the preferred health insurance provider and client's satisfaction. The dependent variable for the study was uptake of health insurance which was determined by the extent of health insurance uptake. The study was carried out in Embu County in both public and private hospitals. Embu County has seven public hospitals and one private hospital according to WHO definition of a hospital. The study was a descriptive cross-sectional study. The sample size was (n=384) which was determined through the formula $n = Z^2p(1-p)/d^2$. Respondents were sampled through stratified random sampling method where eight hospitals formed the stratum. Data was collected by use of self and researcher administered questionnaires by the researcher for a period of two weeks. Collected data was analyzed using SPSS version 20 to draw both descriptive and inferential statistics. Uptake of health insurance was found to be 46.1% majority of them being those employed in the formal sector, and also majority being covered by NHIF. Level of knowledge on health insurance was found to be 52.6%, which could be a major factor contributing to low uptake. Significant relationship was found between gender, level of education and marital status and level of uptake of health insurance. Employment status, nature of employment and terms of employment were also found to influence uptake of health insurance. Despite high uptake being on public health insurance, majority of the population preferred private health insurance. The study drew conclusion that level of uptake of health insurance was low, uptake was being influence by gender, level of education, marital status, and status, nature and terms of employment. The study recommended that there is need for intensified efforts to raise people's knowledge on health insurance and its uptake, to improve the flexibility of features of NHIF to integrate more of those working in the informal sector, the public health insurance companies to improve their service delivery

hence become the scheme of choice for more members of public and also improve on their satisfaction.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Governments and international organizations worldwide have recognized that equitable health systems are essential for achieving health related sustainable development goals. Therefore, reliable healthcare financing systems have been considered essential for ensuring universal healthcare access. This would mean that every citizen should have access to needed healthcare services that are effective and of acceptable quality and that no one should risk financial ruins as a result of illness. The 58th World Health Assembly which was held in 2005 called for nations to move their health systems towards universal coverage so that all individuals can have access to key promotive, preventive, curative and rehabilitative healthcare at an affordable cost so that equity in access can be achieved. Different countries have adopted different health financing systems ranging from universal health insurance coverage by means of National Health Insurance Services to having multiple providers of health insurance and little pre-payment coverage.

1.1.1 Role of health insurance in Universal Health Coverage

According to WHO, moving towards universal health coverage requires strengthening health systems in all countries. To achieve this, robust financing structures are very essential. This is because in situations where people have to pay for health care costs from their own pockets, the poor will mostly not be able to obtain the services they need. The rich may also be at risk of financial hardships in the event of long-term illness. Pooling of funds from sources such as health insurance contributions can help spread the financial risk of illness across populations. Universal health coverage does not only focus on the services that are covered, but also on how they are financed.

Therefore in monitoring the progress towards attainment of universal health coverage, there should be focus on the proportion of people that spends a large amount of household income on health (WHO 2010).

1.1.2 Health care financing in Kenya

Kenya has however undertaken a number of reforms towards health care financing so as to increase coverage for quality health services, improve availability of essential drugs as well as reduce out-of-pocket payments for health services (Mwaura, Barasa, Ramana, Coarasa, & Rogo, 2015). The Kenya health policy 2014-2030 mentions healthcare financing as one of the policy orientations towards the overall policy goal of attaining the highest possible standard of health in a responsive manner. This involves the process of mobilizing and managing the required finances to ensure provision of health and related services. The overall goal of the policy will be attained through ensuring equity, efficiency, transparency and accountability in resource mobilization, allocation and use. This will require efforts to be made towards building a sustainable political, national and community commitment in achieving and maintaining universal health coverage through increased and diversified domestic financing option (Ministry of Health 2014). Among the proposed strategies for ensuring financial risk protection are elimination of payment at the point of use for health services especially by the marginalized and indigent population through social health insurance and government subsidies, promoting private sector participation in financing healthcare through public-private partnership and other mechanisms, and also developing and implementing a healthcare financing policy among others. Therefore the policy's commitment is to progressively facilitate access to services by all by ensuring social and financial risk protection through adequate mobilization,

allocation and efficient utilization of financial resources for health service delivery (Ministry of Health 2014).

According to Kenya Healthcare Federation & Task Force Healthcare (2016), the Kenyan healthcare financing system is made up of various components which include:

1. Financing from taxes: this covers certain services which are offered for free in public health facilities. These include free maternity and treatment for children below five years.
2. National Hospital Insurance Fund (NHIF): this provides financing for certain public and private facilities which have been approved by the fund. Its membership is mandatory for those working in the formal sector. Its membership totals to about 20% of the Kenyan population. NHIF used to provide standard basic inpatient services but has recently expanded its coverage to outpatient services.
3. Private health insurance: About 2% of Kenyan populations are covered by private health insurance. This includes those directly covered by insurance companies (underwriters) and those covered under medical insurance providers in various organizations. There are about 25 private insurance companies which offers healthcare package.
4. Employment based health insurance: these are schemes where the employer offers healthcare as an incentive to the employees. The funds may be managed by the company or by a third party.
5. Community based health financing schemes: these are designed to meet the needs of low income earners who are not able to fit private health insurance

and NHIF. They are mainly registered under the ministry of Public Service, Gender and Youth Affairs.

6. Out-of-pocket (OOP) spending: this involves the patients paying directly for health services at the point of consumption from their own pockets. This is a big barrier to accessing health services by the poor as it drives them into further poverty.
7. Developmental partners and Non-Governmental Organizations (NGOs): these include donors who contribute significantly to healthcare provision and financing.

1.2 Problem statement

Out-of-pocket payment is inequitable and inefficient in financing healthcare services. This has negatively impacted on utilization of healthcare services in Kenya (Mathauer, Schmidt &Wenyaa, 2008).The amount of Out-of-pocket spending on healthcare in Kenya remains high. Currently, 26.6 percent of total health expenditure in Kenya is out –of- pocket. This leads a lot of people into poverty and posing a barrier to access to healthcare since it drives the poorer households easily into poverty. Statistics indicate that more than 46.6 percent of Kenyan population is poor according to the WHO definition of poverty as living on one dollar or less a day (World Bank, 2010). The Ministry of Health estimates that 15% of the poor do not seek health care due to financial constraints while 38% of them always sell assets or borrow in order to pay medical bills. This has further pushed 1.5% of the households below poverty line(Government of Kenya, Health Systems 2020 Project, 2009). Uptake of health insurance is slowly progressing from 9.8% in 2009 to 25% of the total Kenyan population in 2015. Only 2.9 percent of the poorest have some form of cover compared to 41.5 percent of the rich. This is still low bearing in mind that

health insurance is one of the agenda in health financing reforms that are set to steer the country towards realizing Universal Health Coverage (Mwaura, Barasa, Ramana, Coarasa&Rogo, 2015).

Embu County has a population of 603,094 people according to MOH report 2015 and a health personnel ratio of 202 nurses, 41 doctors and 60 clinical officers per 100,000 people (Ministry of Health, 2015). Embu County was also awarded First Prize for Best Practice in Health Information (2015/2016) by Ministry of Health and JICA which looked at areas of effectiveness, efficiency, relevance, sustainability, leadership, replicability, ethical soundness, partnership, community involvement and innovativeness (Ministry of Health ,2016). However, low uptake of health insurance may hinder the members of the population to achieve maximum benefit from these developments towards UHC.

1.3 Justification

Acknowledging the factors that influence people's uptake of health insurance is very important in considering the success of healthcare financing through health insurance, and in reducing overreliance on out-of-pocket payment for healthcare.

1.4 Research questions

The research objectives were translated into the following research questions:

1. What is the extent of health insurance coverage among patients attending public and private hospitals in Embu County?
2. What factors influence uptake of health insurance among patients attending public and private hospitals in Embu County?

3. Which is the preferred type of health insurance provider, between public and private insurance, among patients attending public and private hospitals in Embu County?
4. To what extent are the insured patients satisfied with their health insurance providers?

1.5 Null hypothesis

Socio-economic factors, the type of health insurance provider and extent of satisfaction do not affect uptake of health insurance among patients attending public and private hospitals in Embu County.

1.6 Research objectives

1.6.1 General objective

To determine the uptake of health insurance among patients attending public and private hospitals in Embu County.

1.6.2 Specific objectives

1. To determine the extent of uptake of health insurance among patients attending public and private hospitals in Embu County.
2. To determine the factors that influence uptake of health insurance among patients attending public and private hospitals in Embu County.
3. To determine the preferred type of health insurance provider, between public and private insurance, among patients attending public and private hospitals in Embu County
4. To determine the extent to which the insured patients are satisfied with their health insurance providers.

1.7 Significance of the study

This study sought to find out some of the factors that affect uptake of health insurance and the findings could be used to incorporate various groups into the National Health Insurance Fund (NHIF) and other health insurance providers as the country moves towards universal health coverage. Also, to enable the health insurance providers to improve on their services.

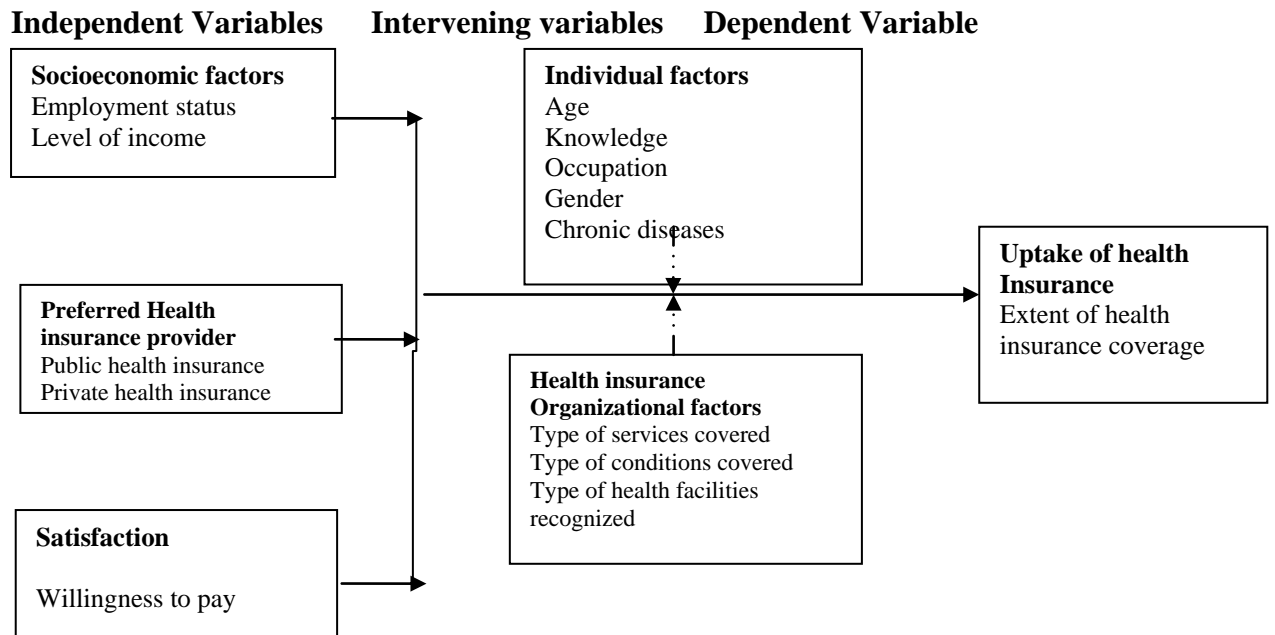
1.8 Delimitation and Limitations of the study

The main delimitation of the study was that it was only targeting patients attending public and private hospitals in Embu County, those who were chosen as respondents. The main limitation experienced during the study was poor participation by the respondents because some of them thought that the researcher was out to sell insurance policies. This was dealt with by clear introduction by researcher.

1.9 Conceptual framework

The dependent variable in this study was uptake of health insurance which was determined by the extent of health insurance coverage. The independent variables were the factors that influenced people's uptake of health insurance. These had been identified in previous studies to include the socioeconomic factors such as employment status and the level of income, and also some the type of health insurance providers. Other factors such as age, education level, occupation, gender, attitude, other benefits, the insurance provider and the mode of payment were the intervening factors which also had some influence on uptake of health insurance as shown in the following figure 1.

Figure 1: Conceptual framework



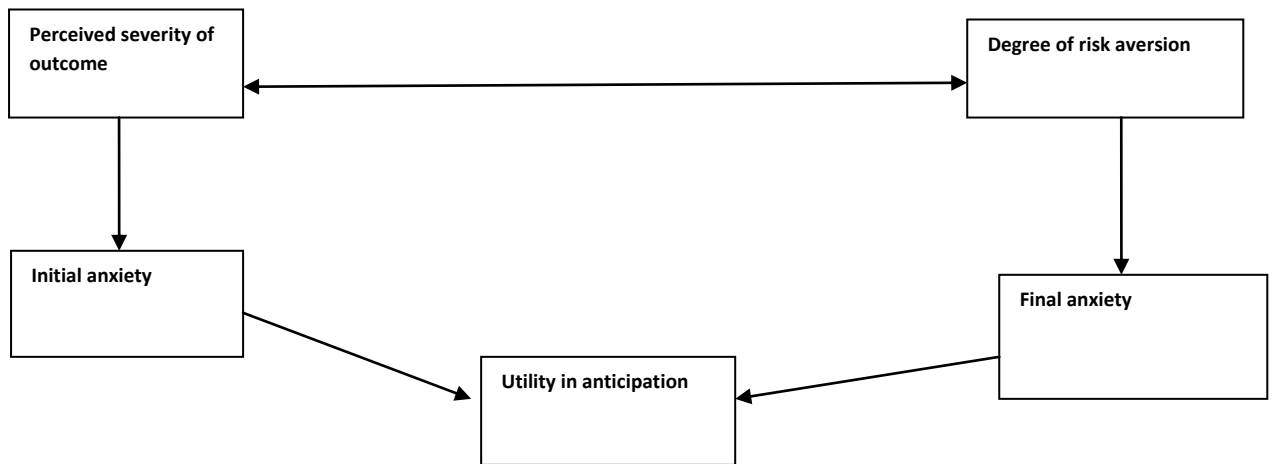
Source: Orodho, (2009).

1.10 Theoretical framework

The importance of health insurance can be explained from the ‘Utility Model of Preventive Behavior’ (Bahar, 2013). This model assumes that all preventive behavior can be expressed as the consumption of risk affecting economic goods. Increased prevention therefore results from increased consumption of risk reducing goods or decreased consumption of risk increasing goods. The model explains that health insurance as a ‘risk reducing good’ whose consumption alters the risk of illness or injury. Such a good either reduces or increases risk depending on whether its consumption reduces or increases the risk of future ill health. This theory explains that the risk affecting goods contains risk affecting qualities which are also viewed as anxiety affecting qualities. Their consumption therefore results in lower anxiety

which is assumed to be preferred to higher anxiety. There is therefore a utility gain which results from consumption of risk reducing goods, which is referred to as ‘utility in anticipation’. This is utility derived from reduction in anxiety. Utility in anticipation therefore is the difference between initial and final level of anxiety where the initial anxiety depends on the perceived severity of the outcome while the final anxiety depends on the degree of risk aversion as shown in the figure below:

Figure2: utility model of preventive behavior



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at various findings on health insurance at the global, regional, national and the local level. Various types of health insurance schemes exist in different countries and most countries are considering health insurance as essential in achievement of universal health coverage.

2.2 Health Insurance: The Global Perspective

There are different global experiences on health insurance which all point towards a common goal of universal health care. However, there are huge differences on the role of government in provision of health insurance between the developing and the developed nations. Nevertheless, health insurance has been considered key method of ensuring universal access to health care in all countries.

2.2.1 Health Insurance Coverage in Advanced Industrialized Nations

In a country such as the United States, there are both private and public insurers in the US healthcare systems. The responsibility of financing the health system is shared by both the private insurance companies and the government. Therefore the United States is a "multi-payer" system. According to the CDC 2011 National Health Interview Survey, only 18.2% of all persons under 65 years in America were uninsured in 2011 (CDC, 2012).

The public health insurance schemes include Medicare, Medicaid and other public systems. Medicare is a federal program that covers individual above 65 years of age as well as some disabled persons. It is financed by federal income taxes, a payroll tax shared by employers and employees, and individual enrollee premiums. Medicaid is a program for the low-income and the disabled. According to the federal law, it must cover very poor pregnant women, children, elderly, disabled and parents. It is financed jointly by states and federal government through taxes. Other public insurance systems include State Children's Health Insurance Program (S-CHIP) which covers children whose families make too much money to qualify for Medicaid but too little to purchase the private health insurance(Schroeder, 2012).

Private health insurance systems in the United States include employer-sponsored insurance and Private no-group insurance. Employer sponsored insurance involves employers providing health insurance as part of benefits package for employees. This is financed by both the employer and the employees where the employer pays the majority of the premium. The private non-group insurance covers part of the population that is self-employed or retired. It also covers some people who are unable to obtain insurance through their employers. (DeNevas-Walt, Proctor & Smith, 2011).

In Canada, healthcare is financed through a tax-based system through general government expenditure of the federal and provincial governments. The Canada Health Act stipulates the insured health care services which are financed by the federal or the provincial governments while those not insured are financed by out-of-pocket payments and private insurance plans. The federal and provincial governments finances all the medically necessary health services while the private health insurances cover the remaining services such as dental care, prescription of drugs and vision care (Thomson, Osborn, Squires, & Reed, 2011).

In England, health insurance coverage is universal. Every citizen in England is entitled to free health care. Majority of the services are publicly funded through the National Health Service (NHS). However, there are few cost-sharing arrangements of about 12% on drugs prescribed by general practitioners. Private health insurance companies mainly provide supplementary medical plans which reimburse the insured for surgery and other treatment by private hospitals and private specialists. Under the supplementary medical plans, the patients benefit from timeliness of the services offered by the private healthcare services because of the long waiting lists in the public sector. It only covers for 12% of the population. Out-of-pocket payment also happens for some services especially in the private sector (Boyle 2008).

2.2.2 Health Insurance Coverage in Developing Nations

Many Low and Middle-Income countries have also found it difficult to sustain health care financing particularly due to the large number of poor people. International policy makers have recommended to them a range of suitable measures for financing the healthcare which includes health insurance schemes such as the social health insurance. This measure is highly supported by the World Health organization following a resolution that it passed in 2005 that it would support a strategy to mobilize more resources for health, for risk pooling, increased access to health care for the poor and delivery of quality care (WHO 2005). Two types of social health insurance schemes exist in the developing nations. These are Government based social health insurance schemes that are organized and supported by governments and Community based social health insurance schemes that operates at the community levels.

Social health insurance has been mandated for people working in the formal sectors in a number of developing countries. Other have adopted an institutional structure where

payments are made to provides for services offered to people who are not in the formal workforce as an alternative to out-of pocket payments. In those countries where social health insurance exists, an existing financing system is used to offer insurance to the informal sector workers at a rate of insurance premium which is adjusted according to the social economic status (Acharya, et al, 2012).

Taking Mexico as a case example, the country adopted *Seguro Popular*, in 2003, which is a national health insurance scheme which operates under the Ministry of Health. This scheme provides access to a package of comprehensive health services with financial protection for more than 50 million Mexicans previously excluded from insurance (Frenk, Gomez &Knaul, 2009). Enrollment to this program is free for the poorest 20 percent but a small fee for voluntary enrollment to those above this level of economic status in the informal sector. The programme allows the enrolled poor to access health care free of charge from the *Seguro Popular*-sponsored health facilities network. *Seguro Popular* was part of a system of social protection in health that that country had legislated as part of health reforms in 2003. In 2012, after 9 years of implementation, the country reached a major milestone in universal coverage. As of April 2012, 52.6 million Mexicans, previously uninsured, were incorporated into the system of social protection in health and the budgetary allocation for universal coverage was achieved (Knaul at al., 2012).

Vietnam is another developing nation that is making a good progress in health insurance coverage. Vietnam's health financing policy puts a strong emphasis on equity in health. Shifting from a tax-based health financing system, Vietnam has been introducing social health insurance (SHI) since 1992 but implementation has been faced with several challenges. The country's health insurance law was promulgated in 2008, with the goal of universal coverage by 2014. The current health insurance

implementation in Vietnam is based on the Social Health Insurance law approved in 2008, which became effective from 1 July 2009. About 50.8 million people were covered by social health insurance in 2010, accounting for 60% of the population. As per the health insurance membership regulations, coverage is individual-based leading to low compliance both in the private formal sector and in informal sector. There are 25 membership categories ranging from the higher-income group (for example parts of the formal sector) to the poor who enjoy government subsidized premiums and all the funds are pooled in one national fund (Tien, Phuong, Mathauer & Phuong, 2011).

2.3 Health insurance coverage in Africa

Most African nations have tried to implement the social health insurance schemes which mostly cover the formal sector employees with joint contribution by the employees and the employers. To extend the health insurance coverage to those in the informal sector and the self-employed, the private and community based health insurance schemes have emerged. A study done by Carapinha, et al (2010) on health insurance systems in five Sub-Saharan African countries namely Ghana, Kenya, Nigeria, Tanzania and Uganda found out that most of the health insurance systems in these countries relied on premium contributions from the members although a few of them relied on revenue from sales and interests on investments.

Taking Ghana as a case example, health care financing is through the National Health Insurance Scheme (NHIS) which came into existence after the passing of National Health Insurance Act in 2003. The law was passed to provide the legal framework necessary to facilitate the establishment of the National Health Insurance Scheme. Under this law, there is the National Health Insurance Authority which licenses, monitors and regulates the operation of health insurance schemes in Ghana. This law

also makes it compulsory for all Ghanaians to join a health insurance scheme in Ghana. There are three categories of health insurance in Ghana under the law: the District-Wide Mutual Health Insurance Scheme, the Private Mutual Health Insurance Scheme and the Private Commercial Health Insurance Scheme (Carapinha et al, 2010).

The District-Wide Mutual Health Insurance Scheme is the most popular and operates in every district in Ghana. It is the public/non-commercial scheme and any resident in Ghana can register under this scheme. The district mutual health insurance scheme also covers people considered to be needy such as the very poor, those without a job and lacking the basic necessities of life to be able to afford insurance premiums. Under this scheme, contributions are payable in line with one's ability to pay.

The second category of health insurance comprises the private commercial health insurance schemes operated by approved companies. They do not receive subsidy from the National Health Insurance Fund and they are required to pay a security deposit before they start operations.

The third category of health insurance is known as the private mutual health insurance scheme. Under this, any group of people can come together and start making contributions to cater for their health needs, providing for services approved by the governing council of the scheme. Private mutual health insurance schemes are not entitled to subsidy from the National Health Insurance Fund. As of October 2008, the NHIS had insured 12 million people out of a total population of 21 million (61% of the total population) (Carapinha et al., 2010).

In Nigeria, health insurance is obtained either through private insurers or the National Health Insurance Scheme (NHIS). About 5 million people are enrolled in three NHIS

Programs, which represents just about 3% of the population. In the Formal Sector Program, employees who pay premiums are covered, in addition to their spouse and up to 4 dependants. Companies that employ more than 10 workers are responsible for enrollment of their employees.

In the Informal Sector Program, the self-employed and individuals living in rural communities enroll themselves. The self-employed must join with at least 500 other members who are occupation based to qualify. Rural dwellers have a similar method of operation but participants need to belong to the same community rather than the same occupational group. The enrollment level in private insurance is quite low with approximately less than 1 million people being privately insured (Joint Learning Network for Universal Health Coverage, 2013).

Since the implementation of National Health Insurance System, about 5 million Nigerians can readily access care through the NHIS. The NHIS benefits package covers virtually all the medical needs of enrollees- from consultation to drugs, consumables and major and minor surgeries. There are however about 46 million Nigerians, or 33% of the population, with no access at all to organized modern health insurance (Joint Learning Network for Universal Health Coverage, 2013).

In Tanzania, around 60% of Health Insurance Programs are privately owned whereby family members' premiums are paid for individually. This means only few people can afford to register with these types of insurance. The majority of its members come from big private companies which are mostly found in urban areas. The social health insurance schemes include the National Health Insurance Fund, Community Health Insurance Schemes (CHF) and Micro-health Insurance Schemes. The National Health Insurance Fund in Tanzania serves only the public service employees including their spouses and four children and legal dependents. It is however a compulsory scheme

for public servants. It only covers 4.5% of the population. The other type of public health insurance is the Social Health Insurance Benefit which is under the National Social Security Fund. This was established so as to provide crucial support to the Government's efforts of increasing access to health care services to the poor majority in the country. It is open to membership and provides most of general healthcare services for beneficiaries. Community Health Fund (CHF) was initiated later to mitigate the shortfall of National Health Insurance coverage. It is a decentralized voluntary health insurance scheme that operates at district levels. It usually targets people from the formal and the informal sector as well as the poor. It was a government initiative to try and cover basic health care services and to give access to those excluded by other schemes. The Micro-health Insurance Schemes (MHIS) are voluntary schemes set up and run by cooperatives, churches and local communities. They cover the informal sector or groups of common interest. Benefit package and contributions are set and agreed by the respective members (Humba, 2011).

2.4 The Kenyan Situation

Kenya has also made significant progress towards health insurance coverage as it focuses on UHC. According to Kenya Household Expenditure and Utilization Survey Report 2007, only 10% of Kenyans had health insurance. Coverage was also found to be higher among those living in the urban areas as compared to those in the rural areas. People of higher economic status were also found to participate in health insurance more than those in the lower economic status (Republic of Kenya-Ministry of Health, 2009). The 2008-09 Kenya Demographic and Health Survey also indicated that only 9.8% Kenyans had health insurance (KNBS & ICF Macro, 2010). In 2015, 25% of the population were covered (Mwaura, Barasa, Ramana, Coarasa&Rogo,

2015). Health insurance in Kenya has been provided by both private and public systems. The public health insurance in Kenya consists of both mandatory and voluntary schemes (Kimani et al, 2012).

2.4.1 Private Health Insurance in Kenya

There are three types of private health insurance providers in Kenya (Kimani et al, 2012). The first type of provider is the general insurance firms, which offer healthcare insurance as one of their portfolio of products on top of other insurance services. The second type of providers are those that run medical schemes and are also health care providers operating their own clinics and hospitals where their clients seek care and the third type of providers are those that provide health care through third party facilities, also known as health management organizations, which are widely used for employer based insurance (Kimani et al, 2012).

2.4.2 Public Health Insurance in Kenya

There are two main providers of public health insurance services in Kenya. These are the National Health Insurance Fund (NHIF) and community-based health Insurance (CBHI) organizations. Membership to NHIF is mandatory for those working in the formal sector, both in the public and private sector, and voluntary for those working in the informal sector. Contributions to NHIF range from between Kshs 500 to Kshs 2000 per month, and a flat rate of Kshs500 per month for those under voluntary membership. Further amendments to these rates are however on progress due to changes in the economic situation in the country (Mathauer, Schmidt &Wenyaa, 2008). In 2014, NHIF had an estimated 4.5 million primary contributors, 98% being from the formal sector and 16% from the informal sector. CBHI is relatively new in Kenya since it was established in 1999 and has only 410, 997 beneficiaries which is

about 1% of the population Kenya (Community Based Health Financing Association, 2008).

2.4.3 The platform for health insurance in Kenya

As the health care advances due to technology and better treatment options are coming up, it is highly likely that the cost of healthcare will rise. Private health insurance has however been predominantly accessible to the middle and higher income Kenyans. Affiliation to NHIF is through households comprising of one spouse, all children below 18 years and dependent relatives. NHIF has made considerable progress in trying to integrate people in the rural areas and those working in the informal sector. The scheme has expanded its service to cover both inpatient and outpatient services, and preventive health services which are very critical.

There is however so much focus on health insurance by various organizations in Kenya including micro-finance organizations and mobile money transfer which are offering payment platforms to those in the informal sector. These organizations can also be used to strengthen Community-Based Health Insurance in Kenya. For example, microfinance organizations bring people from the same geographical locations together and can therefore be good avenues to promote CBHI (Kenya Healthcare Federation & Task Force Healthcare, 2016).

2.5 Health insurance in Embu County

Both public and private health insurance companies exist in Embu County. Some of the private companies offering health insurance in Embu include Madison Insurance, UAP Kenya and Resolution health. Public health insurance includes NHIF which

mostly covers those working in the formal sector and CBHI which mostly covers those working in the formal sector.

2.6 Factors influencing uptake of health insurance

In a study on the determinants for participating in public health insurance program in Kenya, Kimani et al, (2012), found out that employment in the formal sector, participation in social welfare programs (i.e., the national social security fund), participation in microfinance institutions and informal community-based savings groups and being female are significant predictors for uptake of public health insurance.

2.6.1 Influence of socioeconomic factors on uptake of health insurance

In finding out determinants for participation in public health insurance among residents of urban slums in Nairobi, Kimani et al. (2012) found out that employment status is an important determinant of participation in the NHIF program. There was differential participation in the NHIF between the formal and informal sectors and this may have very important implications on the expansion of social health insurance in Kenya (Kimani et al., 2012). A study to assess the determinants of health insurance choice in Kenya found that employed people are more likely to be covered with public health insurance as compared to private health insurance (Kiplagat, Muriithi & Kioko, 2013).

The poor were also found to be less likely to participate in the National Health Insurance Fund program. This is because they are not able to pay the required contributions to NHIF. Among the respondents who lived in areas characterized by extreme poverty, it is only 48% of those working in the formal sector were enrolled in NHIF (Kimani et al, 2012). The study concluded that income was an important

predictor of health insurance ownership. Membership to private health insurance in Kenya is also very low and this is associated with the high cost of premiums. This has therefore been left to the wealthiest population especially those in the urban areas with majority being found in Nairobi (Republic of Kenya, Ministry of Health, 2009).

2.6.2 Other determinants of uptake of health insurance in Kenya

A study assessing factors affecting demand for health insurance in Kenya found out that many Kenyans particularly those in the informal sector have not heard about the concept of health insurance. Therefore there is lack of awareness on health insurance in Kenya (Mathaur, Schmidt and Wenya, 2008). Another factor that was identified by the study was the design features of NHIF where there are heavy penalties of five times the amount in case of default (Mathaur, Schmidt and Wenya, 2008). Another study found out that educated people have the ability to not only acquire skills and knowledge but also to make informed choices on health related matters among them purchase of health insurance to avoid catastrophic health expenditures (Kiplagat, Muriithi & Kioko, 2013).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the methods that were used to collect data, analyze and present it. It also describes the study area, the target population and the sampling method that was used.

3.2 Research design

The study was a descriptive cross-sectional study. All the information required was gathered at that particular moment for the particular target population. This design was the best for the study since neither follow-up nor inquiry into the past was necessary.

3.3 Research variables

3.3.1 Independent variables

The independent variables in this study were:

- Socioeconomic factors
- The available health insurance providers
- The preferred health insurance provider
- Client's satisfaction

3.3.2 Dependent variable

The dependent variable for the study was:

- Uptake of health insurance which was determined by the extent of health insurance uptake.

3.3.3 Intervening Variables

These included:

- Individual factors such as age, attitude, level of knowledge, occupation and gender,
- Health insurance organizational factors such as type of services covered, type of conditions covered and the types of health facilities recognized by the health insurance provider.

3.4 Study area

The study was carried out in Embu County. Embu County is located on the eastern slopes of Mount Kenya and has a population of 543,221 people according to 2009 Kenya Demographic and Household Census data. The residents of Embu County consist of business people, those working in various organizations in the towns and rural areas, and the majority being farmers. Embu County is served by seven public hospitals (one level 5 hospital, three level four hospitals and three level three hospitals), and one private hospitals (Tenri hospital). These are the facilities which meet the WHO definition of a hospital as a health care institution that has an organized medical and other professional staff, and inpatient facilities, and deliver medical, nursing and related services 24 hours per day, 7 days per week (WHO, 2017).

3.5 Target Population

The target population of this study was patients attending the various public and private hospitals in Embu County in a period of one month when the study was being carried out. These amounted to 30,000 patients.

3.6 Inclusion and exclusion criteria

3.6.1 Inclusion criteria

All patients aged between 18 and 60 years who consented to the study.

3.6.2 Exclusion criteria

Non-consenting patients aged between 18 to 60 years and those critically ill who could not properly understand the research questions.

3.7 Sampling technique

Stratified random sampling method was used where the eight hospitals formed eight strata. The target population was proportionally distributed based on the average number of patients attended to in a month as follows:

Table 3.7 Sampling technique

Hospital	Av. patients/month	No. of respondents
Embu level 5	12,000	152
Siakago level 4	2500	32
Ishiarara level 4	3500	45
Runyejes level 4	3500	45
Kiritiri level 3	2000	26
Karurumo level 3	2000	26
Kianjokoma level 3	2000	26
Tenri private hospital	2500	32
Total	30,000	384

3.8 Sample size determination

The required sample size for assessing uptake of health insurance among patients attending public and private hospitals in Embu County was calculated using the following formula by Fishers et al. (1998):

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where: **n** was the desired sample size

Z was the normal standard deviation at 95% confidence level which is 1.96

P was the percentage of the population with the desired characteristics. P of 50% was used because the percentage is not known.

1-p was proportion of the target population not having the desired characteristics.

d was the error margin at the given confidence level which was 0.05

Therefore,

$$n = \frac{1.96^2 \times 0.50 \times 0.50}{0.05^2} = 384$$

10% was added to cater for non-response, therefore a total of 422 respondents.

3.9 Research instruments

Data was collected using questionnaires. The questionnaires had closed ended questions for easier understanding by the respondents.

3.10 Piloting of the study

The data collection instruments were pre-tested in Thika level 5 hospital a week before the actual study.

3.11 Data validity and reliability

Data validity was achieved by ensuring that there was adequate number of questions addressing each of the independent variable (Orodho, 2009). In ensuring validity of the data collected, triangulation was used where similar questions were asked to the same respondents in different ways.

Data reliability was achieved by pre-testing the questionnaires where any ambiguity was identified and necessary corrections were made. Split-half method was also used to improve on data reliability where the questionnaires were divided into two halves, then correlation of scores between the two halves were computed using the Pearson's r formula and then reliability adjusted using the Spearman-Brown formula.

3.12 Data collection technique

Data was collected by the researcher within a period of two weeks by use of self-administered and researcher administered questionnaire which were given to the consenting participants.

3.13 Data analysis

Raw data was coded, edited and entered into excel package after which SPSS version 20 was applied to generate descriptive statistics of frequencies, percentages and proportions of independent variables such as demographic characteristics, knowledge on health insurance and employment status. The Chi square statistics was employed to evaluate association associations of demographic characteristics, status, nature and terms of employment, and uptake of health insurance.

3.14 Ethical Considerations

Permission to carry out the research was sought from Kenyatta University graduate school, Kenyatta University Ethics and Review Committee, NACOSTI and Embu County director of health. Informed consent was also sought from the respondents and information was treated with utmost confidentiality.

3.15 Community Consideration

The study on uptake of health insurance among patients attending public and private hospitals in Embu County was to benefit the members of community by enabling making of policies that will promote increased uptake of health insurance among various groups of people in the community. The study also sensitized the members of community on existence of health insurance as something they should think about. The research findings will be disseminated to members of the community through the office of Director of Health, Embu County.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the study findings on the uptake of health insurance among patients attending public and private hospitals in Embu County.

4.2 Response Rate

100% response rate was achieved since non-response was catered for.

4.3 Demographic Characteristics of the Respondents

Majority of the respondents (33.9%) were aged between 38-47 years and were male (68.75%), they had attained college/university level of education (49%), they were married (65.1%), and were Christians (79.2%), earning a monthly income of below Kshs 10,000 (35.9%).

Table 4.1 Demographic characteristics of respondents

Variable	category	Frequency/percentage
Age (years)	18-27	51 (13.3%)
	28-37	80 (20.8%)
	38-47	130 (33.9%)
	48-57	74 (19.3%)
	58&above	49 (12.8%)
Gender	Female	261 (68%)
	Male	123 (32%)
Education level	None	39 (10.2%)
	Primary	63 (16.4%)
	Secondary	94 (24.5%)
	College/university	188(49%)
Marital status	Married	250 (65.1%)
	Single	87(22.7%)
	Separated	26 (6.8%)
	Divorced	21 (5.5%)
Religion	Christian	304 (79.2%)
	Muslim	62 (16.2%)
	Others	18 (4.7%)
Income level(Kshs)	Below 10,000	138 (35.9%)
	10,001-50,000	115 (29.9%)
	50,001-100,000	92 (24%)
	Above 100,000	39(10.2%)

4.4 Extent of Health Insurance coverage

This sought to find out the level of uptake of health insurance among the target population. 46.1% of the total respondents indicated that they were covered by health insurance while 53.9% indicated that they were not covered as shown in table 4.2 below:

Table 4.2 Extent of Health Insurance coverage

	Frequency	Percent
Yes	177	46.1
No	207	53.9
Total	384	100.0

4.4.1 Type of Health Insurance cover

According to the findings, majority (45%) of the respondents indicated that they were covered by NHIF which is a public insurance, 19.74% of the respondents indicated that they were covered by community based health insurance, 12.37% of the respondents indicated that they were under a private health insurance while 22.6% indicated that they were covered by their employers but still also in NHIF since it is compulsory for all employees in the formal sector as shown in table 4.3 below:

Table 4.3 Type of health insurance cover

Type of health insurance	Frequency	Percentage
NHIF only	80	45.2
CBHI	35	19.77
Private insurance	22	12.43
Employment-based insurance and NHIF	40	22.6
Total	177	100

4.4.2 Types of Health services covered

According to the findings, majority (52.63%) of the respondents were covered for both inpatient and outpatient services, 26.32% were covered for out-patient services only, while the remaining 21.05% indicated that they were covered for only inpatient services as shown in table 4.4. below:

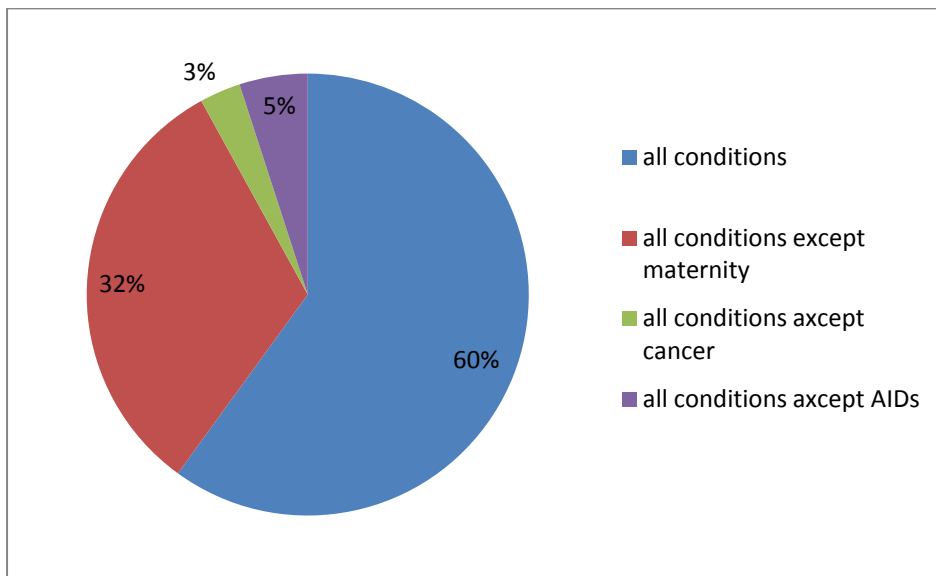
Table 4.4 Types of Health services covered

Type of services covered	Frequency	Percentage
Inpatient only	37	21.05
Outpatient only	47	26.32
Both In & Outpatient	93	52.63
Total	177	100

4.4.3 Types of health conditions covered by health insurance

This sought to find out the types of health conditions the patients are covered for. 60% were covered for all conditions, 32% were covered for all conditions except maternity, 3% were covered for all conditions except cancer while 5% were covered for all conditions except AIDS as shown in figure 3 below:

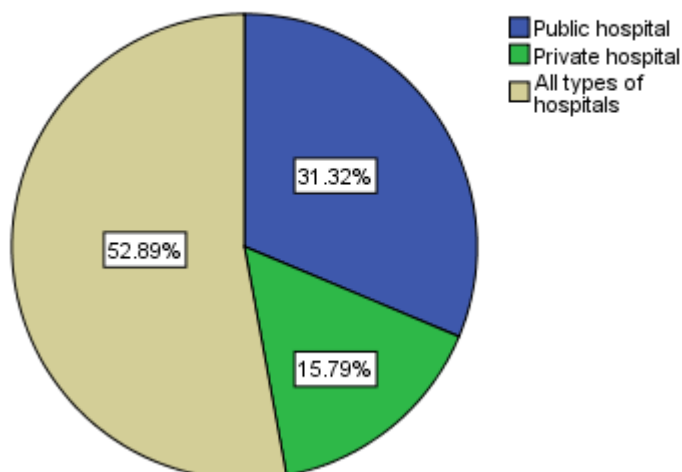
Figure 3: Types of health conditions covered by health insurance



4.4.4 Types of Health facilities recognized by Health insurance

According to the findings 52.89% of the respondents indicated that their health insurance providers were okay with any type of health facility their clients selected, 31.32% of the respondents indicated that their health insurance providers preferred public hospitals while the remaining 16% of the respondents indicated that their health insurance providers preferred private hospital as indicated in figure 4 below:

Figure 4: Types of Health facilities recognized by Health insurance



4.5 Factors that influence uptake of health insurance

The study sought to find out some of the factors that may have an influence on people's uptake of health insurance. Some of the factors that were looked into include awareness of health insurance, age, marital status, religion, level of education, and gender of the respondents. Employment status, nature and terms of employment as well as presence of chronic illness were also looked into.

4.5.1 Knowledge of Health Insurance

According to the findings, 52.86% of the respondents knew what health insurance is. The remaining 47.14% indicated that they did not know what health insurance was as shown in table 4.5 below:

Table 4.5 Knowledge of Health Insurance

	Frequency	Percent
Yes	203	52.86
No	181	47.14
Total	384	100.0

4.5.2 Influence of age on uptake of health insurance

This sought to determine how age influences the uptake of health insurance. Uptake of health insurance was found to be high among those aged 38-47 years and least among those aged 18-27 years. A chi-square test to establish the relationship between age and uptake of Health Insurance gave a $\chi^2 = 9.749$ and a P-value=0.083 at 5 degree

of freedom. Since the P-value was higher than 0.05, the study established that there was no relationship between Age and Uptake of Health Insurance.

Table 4.6 Influence of age on uptake of health insurance

Age	Frequency	Percent	Have Health Insurance	
			Yes	No
18-27	51	13.4	9(17.6%)	42(82.4%)
28-37	80	20.8	46(57.5%)	34(42.5%)
38-47	130	33.85	74(56.9%)	56(43.1%)
48-57	74	19.27	26(35.1%)	48(64.9%)
58& above	49	12.76	22(44.9%)	27(55.1%)
Total	384	100.0	177(46.1%)	207(53.9%)

4.5.3 Influence of marital status on uptake of health insurance

This sought to determine the influence of an individuals' marital status on the uptake of health insurance. Uptake of health insurance was high among those who were separated (76.9%), followed by the divorced (76.2%), then those who were married (42.5%) and least among the single (41.6%).

A chi- square test was conducted to establish the relationship between Marital status and uptake of health insurance which gave a $\chi^2 = 26.499$ and a P-value=0.001 at 3 degree of freedom. Since the P-value was less than 0.05, the study established that there was a significant relationship between marital status and uptake of health insurance.

Table 4.7 Influence of marital status on health uptake of health insurance

	Frequency	Percent	Have health insurance	
			Yes	No
Married	250	65.1	104(41.6%)	146(58.4%)
Single	85	22.1	37(42.5%)	50 (57.5%)
Divorced	25	6.5	16(76.2%)	5(23.8%)
Separated	20	5.2	20(76.9%)	6(23.1%)
Total	384	100.0	177(46.1%)	207(53.9%)

4.5.4 Influence of religion on uptake of health insurance

This sought to determine the influence of a person's religion on the uptake of health insurance. Majority of those insured belonged to other religions (72.2%). Nevertheless, they formed the minority of the respondents. Among the Muslims, 41.9% had health insurance while among the Christians, 45.4% had health insurance as shown in table 4.8 below.

Chi square test to establish the relationship between religion and uptake of health insurance gave $\chi^2 = 2.910$ and a P-value=0.233 at 2 degree of freedom at 0.05 level of significance, this showed no relationship between religion and uptake of Health Insurance.

Table 4.8 Influence of religion on uptake of health insurance

	Frequency	Percent	Have health insurance	
			Yes	No
Christian	304	79.2	138(45.4%)	166 (54.6%)
Muslim	62	16.1	26(41.9%)	36 (58.1%)
Others	18	4.7	13(72.2 %)	5(27.8%)
Total	384	100.0	177(46.1%)	207(53.9%)

4.5.5 Influence of level of education on uptake of health insurance

This sought to determine the influence of the level of education on uptake of health insurance. Uptake of health insurance was high among those who had reached university/college level of education (62.8%), followed by those who had attained only secondary level education (58.2%), then those who had only attained primary level education (20%) and least among those who had not attained any level of education (15.38%). A chi-square test was conducted to establish the relationship between level of education and uptake of Health Insurance which gave a $\chi^2 = 18.693$ and a P-value=0.001 at 3 degree of freedom. Since the P-value was less than 0.05, the study established that there was a significant relationship between education and uptake of Health Insurance.

Table 4.9 Influence of level of education on uptake of health insurance

	Frequency	Percent	Have health insurance	
			Yes	No
None	39	10.2	6(15.38%)	33(84.6%)
Primary	75	16.9	15(20%)	60(80%)
Secondary	122	31.8	71(58.2%)	51(41.8%)
College/university	148	38.5	93(62.8%)	55(37.16%)
Total	384	100.0	177(46.1%)	207(53.9%)

4.5.6 Influence of Gender on Health Insurance uptake

This sought to determine the influence of gender on uptake of health insurance. Uptake of health insurance was found to be higher among females (48.85%) than among the males (40%) as shown in table 4.10 below. Chi square test gave $\chi^2 = 45.881$ and a P-value=0.001 at 1 degree of freedom at 0.05 level of significance, this showed a significant relationship between gender and uptake of health insurance.

Table 4.10 Influence of Gender on Health Insurance uptake

Gender	Frequency	Percentage	Have health Insurance	
			Yes	No
Female	264	68.75	129(48.85%)	135(51.13%)
Male	120	31.25	48(40%)	72(60%)
Total	384	100.0	177(46.1%)	207 (53.9%)

4.5.7 Influence of employment status on uptake of health insurance

Majority of the employed persons (71.1%) had health insurance. Only 30.2% of the unemployed had health insurance. A chi- square test to establish the relationship between employment status and uptake of Health Insurance gave a $\chi^2 = 8.566$ and a P-value=0.036 at 3 degree of freedom. Since the P-value was less than 0.05, the study established that there was a significant relationship between employment status and uptake of Health Insurance

Table 4.11 Influence of employment status on uptake of health insurance

	Frequency	Percent	Have health insurance	
			Yes	No
Employed	149	38.8	106(71.1%)	43 (28.9%)
Unemployed	235	61.2	71(30.2%)	164(68.9%)
Total	384	100.0	177 (46.1%)	207(53.9%)

4.5.8 Influence of nature of employment on uptake of health insurance

This sought to determine the influence of a persons' nature of employment whether formal or informal on health insurance uptake. Huge disparity was observed on

uptake of health insurance among those employed in the formal sector and those in the informal sector. 94.4% of those working in the formal sector compared to 59.7% of those working in the informal sector. A chi-square test to establish the relationship between nature of employment and uptake of health insurance gave a $\chi^2 = 13.537$ and a P-value=0.001 at 1 degree of freedom. Since the P-value was less than 0.05, the study established a significant relationship between nature of employment and uptake of health insurance.

Table 4.12 Influence of nature of employment on uptake of health insurance

Nature of employment	Frequency	Percent	Have Health Insurance	
			Yes	No
Formal	72	48.3	68 (94.4%)	4(5.6%)
Informal	77	51.7	46 (59.7%)	31(40.3%)
Total	149	100	114(76.5%)	35(31.7%)

4.5.9 Influence of terms of employment on uptake of health insurance

Uptake of health insurance was found to be higher among those employed under permanent and pensionable terms (76.8%), then followed by those employed under contract (59.1%) with the least uptake being among those employed under temporary basis (44.4%) as shown in table 4.13 below. A chi-square test to determine the relationship between terms of employment and uptake of health insurance gave a $\chi^2=8.566$ and a p value =0.036 at 3 degree of freedom. Since the P-value is less than 0.05, this indicates that there was a positive relationship between terms of employment and uptake of health insurance.

Table 4.13 Influence of terms of employment on uptake of health insurance

Terms of employment	Frequency	Percent	Have Health Insurance	
			Yes	No
Permanent & Pensionable	69	46.3	53(76.8%)	16(23.2%)
Contract	44	29.5	26(59.1%)	18(40.9%)
Temporary	36	24.2	16(44.4%)	20(55.6%)
Total	149	100	95(68.3%)	54(31.7%)

4.5.10 Influence of chronic illness on uptake of health insurance

Since chronic diseases are associated with increased medical expenses, the study sought to find out whether suffering from a chronic disease had an influence on uptake of health. A chi-square test to determine the influence of chronic illness on uptake of health insurance gave a χ^2 of 7.276; a p value of 0.07 at 1 degree of freedom, the results indicates that chronic illness and uptake of health insurance is negatively correlated.

Table 4.14 Influence of chronic illness on uptake of health insurance

Any chronic illness	Frequency	Percent	Have health Insurance	
			Yes	No
Yes	77	20.3	29(37.7%)	48 (62.3%)
No	307	79.95	148(48.21%) (51.79%)	159
Total	384	100.0	177(48.18%)	207(54.7%)

Preference of Health Insurance provider

The study sought to find out among those who were aware of health insurance the health insurance provider whom most respondents preferred. Among respondents

aware of health insurance, the majority (60.1%) preferred private health insurance while 39.9% preferred public health insurance as shown in the table below.

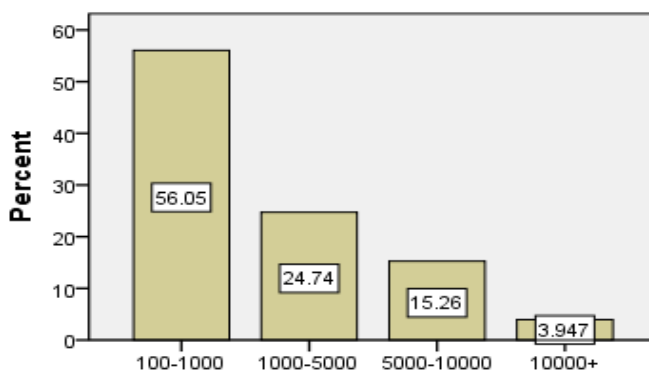
Table 4.15 Preference of Health Insurance provider

	Frequency	Percent
Private insurance	122	60.1
Public insurance	81	39.9
Total	203	100.0

4.6 Level of satisfaction with health Insurance cover

Respondents were asked to state how much premium they were paying per month to health insurance companies. Majority (56.05%) of the respondents indicated that they pay 100-1000 per month, 24.74% indicated that they pay 1000-5000 per month, 15.26% paid 5000-10000 per month while 3.9% indicated that they paid more than 10,000 per month as shown in the figure below. Based on these values, Willingness-to-pay was used to measure satisfaction with health insurance provider.

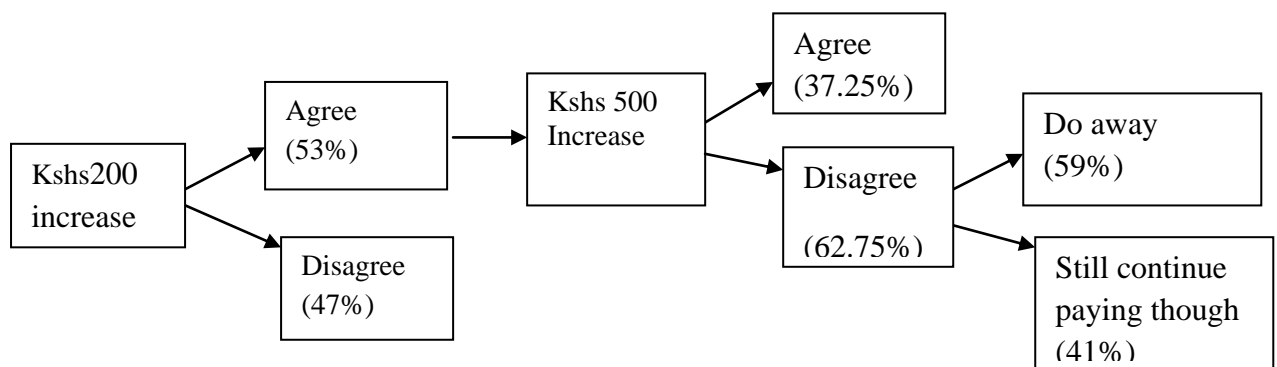
Figure 5: Premium charges per month



4.6.1 Willingness-to-pay as a measure of level of satisfaction with Insurance cover

The study also sought to find out whether the respondents with health insurance were satisfied with their health insurance providers. Willingness-to-pay was used as a measure for moral satisfaction with the health insurance scheme. According to the findings, 53% would continue paying if premiums were increased by Ksh200, while 47% would not continue paying. If it was increased by Ksh 500, 37.25% agreed to continue paying while 62.75% disagreed. The 62.75% were asked what they would then do, 59% stated they would do away with it while 41% would still continue paying though.

Figure 6 Willingness-to-pay as a measure of level of satisfaction



CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

Uptake of health insurance among patients attending private and public hospitals in Embu County was found to be 46.1%. Majority of them were covered under NHIF (40%), followed by those covered by their employers (22.6%), and the least were covered by private health insurance (12.37%). Majority of the insured were covered for both In and Out-patient services (52.63%) with the least being covered for In-patient services only.

In finding out the factors influencing uptake of health insurance, significance relationship was established between demographic factors such as gender, level of education and marital status of the respondents. There was also significant relationship between employment status, nature of employment and terms of employment. High uptake was found between the employed, those employed in the formal sector and under permanent terms of employment. However, the study did not find any significant relationship between uptake of health insurance and presence of chronic illness. Despite higher uptake of public health insurance, majority of the respondents stated that they preferred private health insurance giving reasons such as better service delivery. The study also sought to find out level of satisfaction which was measured by willingness-to-pay and found it to be 41%.

5.2 Discussion

The study sought to find out the uptake of health insurance among patients attending public and private hospitals in Embu County. After the analysis of data, the following inferences were drawn:

5.2.1 Extent and type of health insurance coverage

From the research findings, only 46.1% were found to be covered by health insurance majority of them being covered under the National Health Insurance Fund (NHIF). The high uptake of NHIF could be attributed to the fact NHIF requires compulsory membership for all salaried employees with the premiums being automatically deducted through the payroll based on a person's earnings. NHIF also has high popularity since it is a national health insurance scheme.

Due the current focus by the Kenyan government towards UHC, NHIF has been putting more efforts to expand its membership base especially in the informal sector. However, NHIF is yet to adopt more innovative technologies that can be of benefit to the fund and to some extent reduce the cost. Recently, NHIF has also included outpatient services in its package and this has increased the benefits its offers to its clients. This move also tends towards preventive healthcare since the members are covered for screening for various diseases (Ministry of Health, 2016).

The prevalence of CBHI is also worth noting. This is a micro-insurance scheme that offers coverage to low income households to enable them access essential healthcare. It is more popular among communities where there is organized sale of cash crops such as tea and Khat in Embu County. Strengthening CBHI can offer an alternative to low income households who lack regular sources of income. An example of a well-established CBHI is Jamii Bora Health Insurance (JBHI) which according to a study by Mwaura and Pongapich (2012) indicated that the uptake and utilization of Jamii Bora Health Insurance was high among the poor and those in the poorest quintile were more likely to benefit from it. Overall JBHI favored those in the lower income quintiles who were more likely to use health care services covered by the

JBHI scheme. Countries such as Rwanda and Ghana which have enrollments of 91% and 60% respectively have a strong pre-existing community based healthcare financing system and strong legal and regulatory institutions to mandate the cover. Currently, in Kenya there are over 30 CBHI schemes which are at different stages of development. However, there lacks a legal framework to regulate their operations(Kenya Healthcare Federation & Task Force Healthcare, 2016).

Majority of those with private and employment-based health insurance cover were more concentrated in the private hospitals and were found to be covered for wider range of services. Private health insurance competes in terms of service delivery and quality of services. However, the same faces challenge of targeting clientele that already have medical covers as part of employment benefits. The fact the some health insurance schemes do not cover all types of health conditions also calls for innovativeness to ensure maximum benefits to the members.

5.2.2 Factors influencing uptake of health insurance among patients attending public and private hospitals in Embu County

The study sought to find out whether factors such as demographic characteristics of the respondents, level of awareness of health insurance, employment and presence of chronic illness have an influence on uptake of health insurance.

The study found no significant relationship between age and religion of respondents. However, significant relationship was found between gender, level of education and marital status of respondents. High uptake of health insurance was found among females as well as those who had attained college/university level of education.

These findings corroborates evidence from study by Kiplagat, Muriithi&Kioko, (2013) on determinants of health insurance choice in Kenya who found uptake to be

higher among educated people and this was attributed to by the fact that educated people have the ability to not only acquire skills and knowledge but also to make informed choices on health related matters among them purchase of health insurance to avoid catastrophic health expenditures. The study also found more females to own health insurance compared to males. The study hypothesized that females especially at the reproductive age demand more medical services and are therefore more likely to purchase health insurance cover.

The level of awareness of health insurance among patients attending public and private hospitals in Embu County was found to be 52.86%. The remaining 47.14% were not aware of what health insurance was. The level of awareness according to the study findings was low compared with findings of a study by Mulupi, Kirigia and Chuma (2013) in Nyeri and Kirinyaga districts found the level of awareness to be 78.4%.

The study found significant relationship between employment and uptake of health insurance where high uptake was among the employed persons than among the unemployed. There was also a significant relationship between uptake of health insurance and terms and nature of employment with uptake being high among those employed in the formal sector and those working under permanent and pensionable terms.

The study findings corroborated those of studies carried out by Kimani, et al. (2004) and another study by Mathauer et al. (2008) which identified low membership to health insurance schemes among those working in the informal sector majority of whom are under contract and temporary terms of employment. The low participation among informal sector employees was associated to low and non-regular income,

insecure employment and the inflexibility of the features of the health insurance schemes such as their fixed payment schedules. The high uptake among the formal sector employees was attributed to the fact that the employers are mandated by the law to enroll their employees in health insurance schemes.

However, both the public and the private health insurance schemes are coming up with initiatives to reach the informal sector workers and low income earners with the voluntary membership schemes as well as low cost private health insurance schemes. However, some of the challenges faced especially by the private health insurance companies include how to design the appropriate product and how to effectively collect the contributions bearing in mind the infrastructural challenges in most rural areas of Kenya.

5.2.3 Preferred health insurance provider

Despite higher intake of public health insurance, majority of the respondents stated that they preferred private health insurance. Some of the reasons for preference included more services being offered and better service delivery. In the private health insurance schemes there also exist enhanced or comprehensive covers which offers cover even for conditions that were traditionally excluded from health insurance such as pre-existing conditions, HIV/AIDs, organ transplants and maternity-related conditions among others. On the other hand, some health insurance schemes especially the public schemes restrict service provision to government and mission hospitals where treatment costs are lower. All these factors explain people's preference for private schemes compared to public ones.

However, the Kenya Health Policy 2014-2030 proposes that one of the ways through which health financing can be achieved is through promoting private sector

participation in financing of healthcare through public-private partnership and other mechanisms (Ministry of Health, 2014).

5.2.4 Level of satisfaction with health Insurance cover

Level of satisfaction with health Insurance cover was measured using willingness-to-pay (WTP). WTP for health is an issue in individual and public decision making about healthcare. It refers to individual's willingness to spend more money personally, i.e out of pocket, to obtain health gain for themselves, or to avoid health losses or reduce health risks for themselves. WTP is interpreted as an indicator of how much satisfaction or well-being (often called utility) individuals derive from (or believe they derive from different health outcomes).

Majority of the respondents paid premiums between Kshs 100-1000. Level of satisfaction for those already in insurance schemes was found to be 41%. This is the population who would still continue paying even if the amount of policy would be increased. This could be due to a subjective obligation to pay for the services. These findings corroborate evidence from a study by Mohammed, Sambo & Dong (2011) where level of satisfaction among enrollees of NHIS in Zaria-Nigeria was found to be 42.1%.

The fact that 41% would continue paying even if premiums were increased could be linked to the utility- in -anticipation as explained in the 'Utility Model of Preventive Behavior' where consumption of health insurance as a 'preventive good' leads to utility- in -anticipation. This is utility that results from the increased peace of mind resulting from consumption of such a good. Therefore uptake of health insurance, as a preventive good, reduces the uncertainty associated with occurrence of illnesses or

injury in the future. The 41% would therefore want to continue enjoying this form of utility.

5.3 Conclusion

From the study findings, the following conclusions can be made:

1. The uptake of health insurance in Embu County is 46.1% . This is an indication that Embu County is still far from achieving universal health insurance coverage.
2. Some of the factors influencing uptake of health insurance are level of education, employment status, nature of employment and terms of employment. Other factors identified by the study include marital and gender.
3. Most people would prefer private health insurance providers due to better service delivery as compared to public health insurance.
4. Some of those in health insurance schemes are not satisfied with their health insurance providers and are not willing to pay more. Some would even opt to do away with the scheme instead of paying more.

5.4 Recommendations

The following recommendations were put forward based on the study findings discussed above.

1. As part of efforts towards universal healthcare access, government should intensify efforts to raise the uptake of health insurance to ease the burden of healthcare costs and improve healthcare access especially to the poor. This would require the government to give priority to healthcare especially due to the rising burden of non-communicable diseases.

2. Some of the factors that hinder people's uptake of health insurance such as employment status should be addressed by coming up with a subsidized policy that will accommodate people of different status.
3. The government needs to adopt technology and innovativeness in improving service provision in public health insurance schemes so that they would be insurance schemes of choice for majority citizens.
4. Health insurance providers should make an effort of improving their services to make sure they meet the needs of their clients hence improve the satisfaction.

5.5 Suggestions for further research

Further research can be done on the influence of health risk on uptake of health insurance among those working in the informal sector. This is important due to the fact that where there is no legal obligation to enroll in health insurance, health risks arising from nature of employment can be a determining factor.

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[Medicine/book/9781437716047/Goldmans-Cecil-Medicine/](http://www.us.elsevierhealth.com/Medicine/Internal-Medicine/book/9781437716047/Goldmans-Cecil-Medicine/)

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APPENDICES

APPENDIX 1: RESEARCH QUESTIONNAIRE

ASSESSMENT OF UPTAKE OF HEALTH INSURANCE AMONG PATIENTS ATTENDING PUBLIC AND PRIVATE HOSPITALS IN EMBU COUNTY

CODE.....

My name is Catherine Ndegi Nguru, a student from Kenyatta University, Department of Health Management and Informatics. I am here to collect data for my research on “Uptake of health insurance among patients attending public and private hospitals in Embu County”. The information gathered from this study will be used as part of my study requirements for fulfillment of award of Masters Degree in Health Management. I kindly request you to offer me the assistance I require.

SECTION 1: SOCIO-DEMOGRAPHIC DATA

1. Gender

Male Female

2. Age (in completed years)

20 -29

30 – 39

40 – 49

50 – 59

Above 60

3. Highest level of formal education attained

Primary Secondary College/university None

4. Religion

Christian Muslim Hindu

Other (specify) _____

5. Marital status

Single Married Divorced Separated **SECTION 2: FACTORS INFLUENCING UPTAKE OF HEALTH INSURANCE**

1. Are you employed/self-employed?

Yes No

2. If yes, what is the nature of your employment?

JuaKali(self-employed)

Government

Private sector

NGO

Other(specify) _____

3. What are the terms of your employment?

Permanent

Contract

Temporary

Other (specify) _____

4. What is your average monthly level of income?

Below 10,000

10,001 - 50,000

50,001 - 100,000

Above 100,000

5. Do you know what health insurance is?

Yes No

6. If yes, what types of health insurance do you know? (list below)

NHIF

Private Insurance

Employer funded Insurance

Community/NGO funded insurance

Any other (specify) _____

EXTENT OF HEALTH INSURANCE COVERAGE

1. Do you have health insurance cover?

Yes No

2. What is the type of your health insurance cover?

NHIF

Community Based Health Insurance

Private Insurance

Employment-based Health Insurance

Other (specify) _____

3. What health services are you covered for?

Inpatient only

Outpatient only

Both inpatient and outpatient

Other (specify) _____

4. What health conditions are you covered for?

All conditions

All conditions except maternity

All conditions except cancer

All conditions except AIDS

Limited number of conditions (specify) _____

5. Which hospitals are recognized by your health insurer?

Private hospitals only

Public hospitals only

Both private and public hospitals

6. Do you suffer from any chronic disease?

Yes No

SECTION 4: PREFERRED TYPE OF HEALTH INSURANCE PROVIDER

1. Which is the best type of health insurance according to you?

Private health insurance

Public health insurance

2. Give reasons for the answers in 1. above

More services offered

Low cost of premiums

Better response when in need

Better service delivery

Other benefits

SECTION 5: LEVEL OF SATISFACTION WITH INSURANCE COVER PROVIDED

1. How much premiums do you pay for the health insurance cover per month (Kshs)?

100 – 1,000

1,000 – 5,000

5,000 – 10,000

Above 10,000

2. Would you be willing to continue paying if the premiums were increased by Kshs 200 per month?

Yes

No

3. If yes, would you still be willing to pay if the premiums were increased by Kshs 500 more?

Yes

No

4. If No to 1 above, what would you do if the premiums were increased?

Still continue paying though

Stop paying and quit the medical cover

APPENDIX 2: INFORMED CONSENT

My name is Catherine Ndegi Nguru. I am a Masters student from Kenyatta University. I am conducting a study on “Uptake of Health Insurance among Patients Attending Public and Private Hospitals in Embu County”. The information will be used as part of my study requirements for fulfillment of award of Masters Degree in Health Management.

Procedures to be followed

Participation in this study will require that I ask you questions and record the information on a questionnaire. You have the right to refuse participation in this study. Please remember that participation in this study is voluntary and you may also ask questions related to the study any time.

You may also refuse to respond to any questions and you may stop me from asking you questions at any time. There are no consequences attached to your refusal to participate.

Discomforts

Some of the questions asked are on personal subjects and may make you uncomfortable. If this happens, you may refuse to answer the questions. The study may take about 20 minutes of your time.

Benefits

If you participate in this study you will help me to learn about extent of uptake of health insurance in the county as well as challenges facing the uptake.

Rewards

Kindly note that no rewards attached to your participation in this study.

Confidentiality

The information obtained will be confidential and your name will not be recorded in the questionnaire.

Contact information

If you have any questions, you may contact:

Dr. Yitambe on 0715720568, or Dr. Kodhiambo on 0724468162, or the Kenyatta University Ethical Review Committee Secretariat on chairman.kuerc.ac.ke, or secretary.kuerc@ku.ac.ke, ercku2008@gmail.com

Participant’s statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand the information will be confidential and I can refuse to answer the questions that make me feel uncomfortable.

Name of Participant.....

Signature or Thumbprint.....

Date.....

Investigator's statement

I, the undersigned, have explained to the volunteer in a language s/he understands the information to be acquired from him/her and any anticipated discomforts.

Name of Interviewer: Catherine Ndegi Nguru

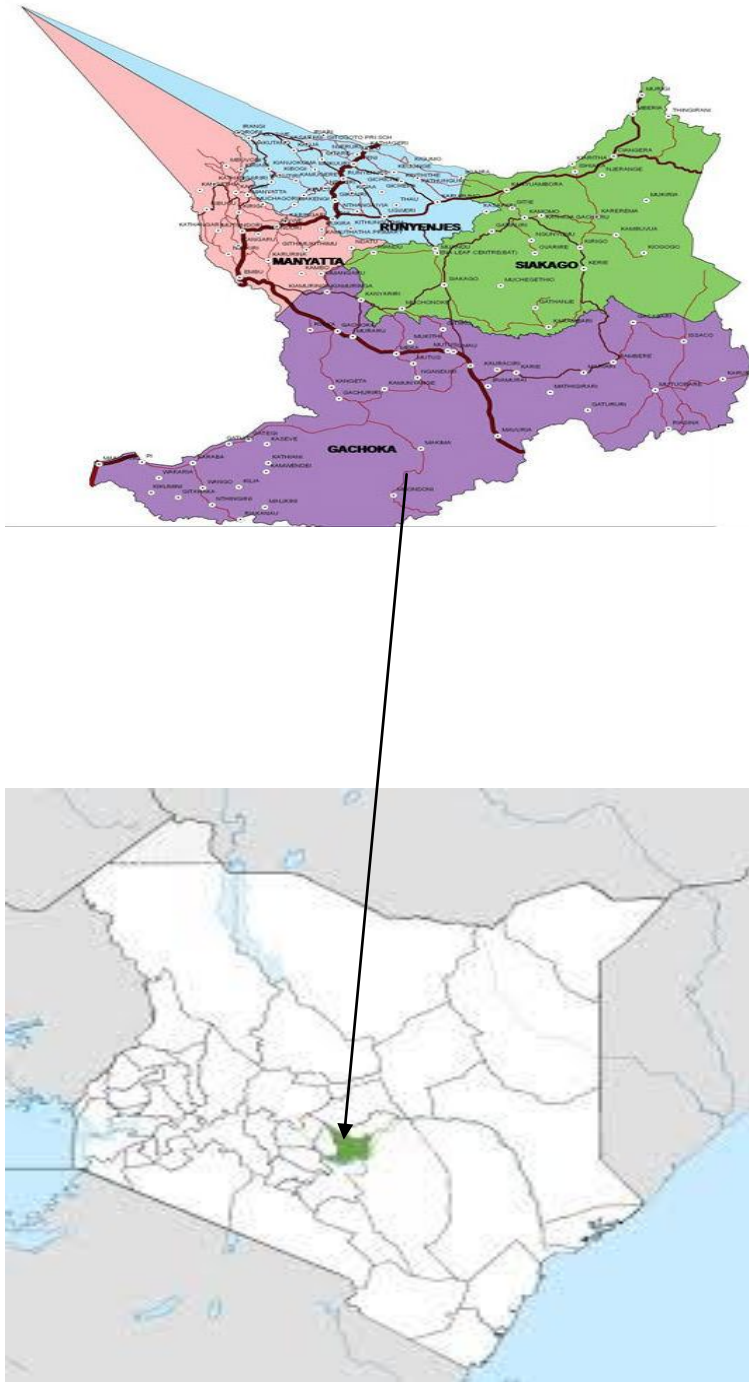
Signature.....

Date.....

Phone: 0724 775658

Email: katenguru@gmail.com

APPENDIX 3: MAP OF THE STUDY AREA



Source: <http://www.embu.go.ke/>

APPENDIX 4: RESEARCH AUTHORIZATION



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No.

Date:

6th October, 2015

NACOSTI/P/15/1173/7491

Catherine Ndegi Nguru
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Uptake of health insurance among patients attending public and private hospitals in Embu County, Kenya*" I am pleased to inform you that you have been authorized to undertake research in **Embu County** for a period ending **6th October, 2016**.

You are advised to report to **the County Commissioner, the County Director of Education and the County Coordinator of Health, Embu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


SAID HUSSEIN
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Embu County.

The County Director of Education
Embu County.



APPENDIX 5: IDENTIFICATION OF PROTOCOL



KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE

Email: chairman_kuerc@ku.ac.ke
secretary_kuerc@ku.ac.ke
ercku2008@gmail.com
 Website: www.ku.ac.ke
 Our Ref: KU/R/COMM/51/450

P. O. Box 43844 - 00100 Nairobi
 Tel: 8710901/12
 Fax: 8711242/8711575

Date: 27th April, 2015

Catherine Ndegi Nguru
 Kenyatta University,
 P.O Box 43844, Nairobi

Dear Ms. Nguru

APPLICATION NUMBER PKU/326/ 1301 – “UPTAKE OF HEALTH INSURANCE AMONG PATIENTS ATTENDING PUBLIC AND PRIVATE HOSPITALS IN EMBU COUNTY, KENYA” .

IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic, “Uptake of health insurance among patients attending public and private hospitals in Embu County, Kenya” received on 3rd March, 2015 and discussed on 14th April, 2015.

2. **APPLICANT**
Catherine Ndegi Nguru
3. **SITE**
Embu County, Kenya
4. **DECISION**
The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 27th April 2015.
5. **ADVICE/CONDITIONS**
 - i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
 - ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
 - iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
 - iv. Submit an electronic copy of the protocol to KUERC.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.


 PROF. NICHOLAS K. GIKONYO
 CHAIRMAN: KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE

I, Catherine N. Nguru accept the advice given and will fulfill the conditions therein.

Signature  Dated this day 22 of July 2015.
 cc. Vice-Chancellor