

**FACTORS INFLUENCING UPTAKE OF NATIONAL
HEALTH INSURANCE IN THE INFORMAL SECTOR: A
CASE OF ITHANGA DIVISION IN MURANG'A COUNTY,
KENYA**

By

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**A RESEARCH PROJECT REPORT SUBMITTED IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF MASTER OF ART IN
PROJECT PLANNING AND MANAGEMENT OF THE
UNIVERSITY OF NAIROBI**

2015

DECLARATION

This research project report is my original work and has not been presented for any examination in any other institution

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DEDICATION

This work is dedicated to my loving parents, Mr. Ndung'u Muriithi and Mrs Eunice Nyakweya and the entire family for their financial and moral support during the entire period of study. May the Almighty God bless you all.

ACKNOWLEDGMENT

I would wish to thank the Almighty God for His guidance throughout the development of this project report. My sincere gratitude goes to my supervisor Prof. Christopher M. Gakuu for dedicated supervision, guidance and encouragement in the development of this research project report.

I also wish to thank the entire staff of Thika Extra Mural Centre, UON, for teaching me the various units in project planning and management. The knowledge acquired was instrumental in the development and writing of this report. My appreciation also goes to the MA (Project Planning and management) class of 2012 for the team work and moral support.

Special gratitude to my family members for patience and financial support throughout my study.

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ABBREVIATIONS AND ACRONYMS

GDP - Gross Domestic Product

GOK - Government of Kenya

ILO - International Labor Organization

KNBS –Kenya National Bureau of Statistics

MFI - Micro Finance Institutions

MHI – Micro Health Insurance

MDGS - Millennium Development Goals

NHA- National Health Accounts

NSHIF - National Social Health Insurance Fund

NHIF - National Hospital Insurance Fund

NGO - Non Governmental Organization

OOP- Out-Of Pocket Payments

SID-Society for International Development

WHO-World Health Organization

WHA-World Health Assembly

WTP-Willingness To Pay

ABSTRACT

The purpose of the study was to investigate the factors influencing the uptake of National Health Insurance in the informal sector in Ithanga Division, Murang'a County, Kenya. The study was guided by four specific objectives; (1) To assess the influence of demographic factors on uptake of health insurance in the informal sector (2) To determine the influence of level of education on uptake of health insurance in the informal sector (3) To assess the influence of economic factors on uptake of health insurance in the informal sector and (4) To establish the influence of level of awareness on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County. The study adopted a descriptive survey research design. The study population was the 4555 households among 19,359 residents: 9330 males and 10,013 females of Ithanga Division of Murang'a County. The study used stratified systematic sampling techniques to sample 354 respondents. A questionnaire (HHQ) was used to collect data from the households' heads. Piloting of the instrument was carried out in Makuyu Division using a sample of 35 households' heads representing 10% of the study sample of 354. Split-half technique was used to determine the reliability of the questionnaire. A correlation coefficient(r) value of 0.89 was obtained. The data for the main study was collected for a period of one week with the aid of three trained research assistants. After cleaning the data, coding was done and then analyzed using Statistical Package for Social Sciences (SPSS version 21.0). Quantitative data were analyzed using descriptive statistics such as frequencies, and percentages. Findings were then presented in frequency distribution tables. Qualitative data were analyzed thematically. The study found more females (18.90%) had enrolled compared to males (14.53%). Those aged 46 years and above had a higher enrollment of 49 (14.2%), and the married had a higher enrolment of 79 (23.0%), Level of education was significant in influencing their decisions to enroll. Enrollment for people with higher incomes and those who were affiliated to social welfare groups. The out awareness of NHIF registration procedures, premium payment mechanisms and the benefit packages is low and this greatly influenced the uptake of the cover. The study concluded that demographic factors (including gender, age, marital status, household size and the number of children in the household), level of education, socio-economic factors and awareness had influence on the uptake of NHIF in the informal sector. The study recommended the need to increase the awareness about health insurance, subsidizing the premiums, review of premiums payment period, extending the NHIF office network and increasing the number of health facilities. The study recommends further studies to investigate the influence of culture and religion in enrollment decisions, the extent of adverse selection in the enrollment, and the factors influencing retention and dropout from the insurance scheme and dropout from the insurance scheme.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Financing and providing affordable, accessible and quality healthcare is one of the key health policy problems currently facing communities, governments, policy makers and international development institutions. Worldwide, 1.3 billion people in developing countries do not have access to adequate and affordable healthcare due to the high cost of using medical services WHO (2005). Other access barriers include; the high cost of out-of-pocket payments for care, long queues, unavailability of health facilities and few health workers. Developing countries are in a difficult situation due to scarcity of resources which have to be shared among many competing priority areas of development; with the problem of access being exacerbated by high population growth rates, HIV/Aids, Tuberculosis and Malaria affecting large segments of the population. Other problems include the high maternal and infant mortality rates and the growing burden of non-communicable diseases which places additional strain on the healthcare system.

According to WHO World Health Statistics (2010), low and middle income countries bear 93% of worlds disease burden yet account for only 11% global health spending. In developing countries, the low economic growth, limited capacity to collect tax revenues and competing priorities limit the tax revenue available for the health sector. Poor health prevails in many developing countries. World Bank (2005) attributed this state of affairs to underfunding of health, poor management of public health services and the inability of public primary care services to match the demands of the growing populations. In the year 2000, the global community committed to eradicate extreme poverty and improve the health and welfare of the world's poorest countries through eight time-bound goals known as the Millennium Development Goals (MDGs), with health at the heart of the MDGs due to the recognition of its role in reducing poverty and also as a measure of human well-being.

In 2001, African heads of state committed themselves to taking all necessary measures to ensure that resources are made available to healthcare. The agreement was for allocation of 15% of national annual budgets to improving healthcare. At the global level, attention has turned to universal healthcare as a viable solution for improving accessibility and affordability of improving accessibility and affordability of healthcare. In May 2005, the 58th World Health Assembly adopted resolution WHA 58.33 urging member states to ensure that health financing systems include methods of prepayment of financial contribution. These resolutions encouraged a transition to universal health coverage (WHO, 2005). It was hoped that social health insurance schemes would be useful strategy for mobilizing more resources for health, pooling risks, provide equitable access to healthcare for the poor and delivering better quality health (Carrin *et al.*, 2007)

Interest is growing among policy makers on the importance of establishing sustainable health insurance programs as a way of increasing access to health care and protecting families from catastrophic healthcare costs. Health insurance is a mechanism for setting aside financial resources to meet costs of medical care in the event of illness. Health shocks diminish the capacity of a household to generate income when key family income earners are unable to continue with productive activities due to ill health and subsequent inability to pay medical bills. Health insurance reduces financial burden of purchasing healthcare by pooling funds and sharing the risks of unexpected health events, and its attractiveness lies in risk sharing between the well and the sick and reducing out-of-pocket expenses (Xu *et al.*, 2003)

Some developed countries including Denmark, France, Germany, Portugal and the United Kingdom have achieved universal coverage. According to Wang *et al.* (2012) African countries have spent scarce time, money and effort on health insurance initiatives but most of the schemes cover only a small proportion of the population mainly working in the formal sector. Extending health insurance to the informal sector in many developing countries has been a challenge partly due to poverty and difficulty in collecting premiums from the informal sector workers, most of who are geographically dispersed but a few African countries have however been successful in increasing access to healthcare through health

insurance. According to the World Health Report (2010), Rwandan government has supported creation of over 1000 mutual health insurance schemes and by 2007, 74% of the population had some form of health insurance cover. Under the insurance scheme, premiums are collected by community health workers and transferred to a district level fund and then used to pay for health services.

Kenya has had the National hospital insurance fund, since its establishment in 1966 through an Act of Parliament, Cap 255 laws of Kenya, which has been revised to NHIF Act No. 9 of 1998. It was designed to offer inpatient insurance cover to formal sector workers only. However, changes in regulations over the years have allowed informal sector contributors to enroll into the scheme, with their contributions set at Ksh 160 per month or Ksh 1920 per year. The members are able to access in-patient insurance cover through the network of more than 400 NHIF accredited facilities distributed in all 47 counties in the country. Attempts to promote universal health coverage in Kenya through the proposed National social health insurance fund have faced challenges, including resistance from trade unions and other stakeholders in the health sector. The bill which was to introduce social health insurance failed to go through all the approval stages following resistance from many fronts. The low penetration of health insurance in Kenya has meant that many poor people in rural and urban areas are denied access to quality healthcare due to their inability to meet the high out-of-pocket payments that characterize the healthcare financing system.

1.2 Statement of the Problem

Health insurance, which is an acknowledged mechanism for meeting the healthcare costs in households, is mainly available to the population in the formal sector in Kenya. The Kenyan economy is characterized by a relatively small and stagnant formal economy with 1.9 Million employees and a large and growing informal sector with over 8.3 Million employees. The informal sector in Kenya contributes significantly to the gross domestic income, job creation, and income generation to the majority of citizens as well as provision of vital services to the poor segments of the society. Despite the central role played by the informal sector in the socio-economic life of Kenya in providing livelihood, mainstream policies have not paid

attention to the sector. Informal sector workers are continuously exposed to more risks than higher income groups in the society. The exclusion leads to delays in seeking healthcare until it is too late, causing death and suffering especially among the poorest and most vulnerable groups. Health insurance schemes can create an increased availability of affordable healthcare as it enables one to meet the costs of medical expenses. As at 30th October 2014, only 1,480,088 from the informal sector were registered in NHIF(NHIF Members' Register, 2014).Despite the aggressive promotional campaigns conducted through media and field visits to sensitize Kenyans on the importance of health insurance, the uptake of health insurance by the informal sector is still very low. Therefore, there was need to conduct a study to investigate the factors influencing uptake of health insurance in the informal sector, especially in rural areas in Kenya.

Ithanga Division is in Murang'a South District, Murang'a County. According to the Kenya National Bureau of Statistics and Society for International Development (2013) report on Murang'a County, the Division has a total population of 19,343 persons; 9330 males and 10,013 females. It has a total of 4544 households distributed as followed: 0-3 persons (40.3%), 4-6 persons (43.4%) and 7 or more persons (16.3%) respectively. The highest proportion of the adult population, 6258 (66.46%) have primary education while 577(6.1%) had no formal education. The report further says 51% of the residents live below the poverty line. With this background there was need to investigate the factors influencing the uptake of health insurance in the Division. Therefore the current study was designed to investigate the factors influencing uptake of National Health Insurance in Ithanga Division, Murang'a County, Kenya.

1.3 Purpose of the Study

The purpose of the study is to investigate the factors influencing uptake of National Health Insurance in the informal sector: A case of Ithanga Division, Murang'a County, Kenya.

1.4 Objectives of the Study

The study was guided by the following four objectives:-

1. To assess the influence of demographic factors on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County.
2. To determine the influence of level of education on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County.
3. To assess the influence of economic factors on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County
4. To establish the influence of level of awareness on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County

1.5 Research Questions

The study was guided by the following research questions:-

- 1) To what extent does demographic factors influence uptake of health insurance in the informal sector in Ithanga Division, Murang'a County?
- 2) To what extent does level of education influence uptake of health insurance in the informal sector in Ithanga Division, Murang'a County?
- 3) How does economic factors influence uptake of health insurance in the informal sector in Ithanga Division, Murang'a County?
- 4) To what extent does level of awareness influence uptake of health insurance in the informal sector in Ithanga Division, Murang'a County?

1.6 Significance of the Study

It is hoped that the study findings may aid in policy formulation especially in the redesigning the health insurance products to suit the specific needs of informal sector workers in rural areas in Kenya. It is also hoped that the study may sensitive stakeholders in the insurance sector on barriers to uptake of health insurance in the informal sector. Key health financing policy makers especially the Ministry of Health and National Hospital Insurance Fund may use the findings in setting the premiums, collection mechanisms and benefit packages of the

current fund and the proposed universal health coverage scheme. Understanding the level of awareness of health insurance will assist in designing of simple health insurance messages and aid in selecting the communication channels for marketing health insurance in the mainly rural informal sector populations. Other stakeholders in the private health insurance industry may also use the findings of the study to address the barriers to uptake of micro-health insurance products.

1.7 Delimitations of the Study

The study was delimited to Ithanga Division, Murang'a County. It targeted the residents in the informal sector. Ithanga Division was chosen because it is in a rural setting. In addition, it is one of the poorest Divisions with some of the worst health indicators in Murang'a County (KNBS and SID, 2013). The Division has diverse agricultural, small scale businesses and is therefore likely to represent the informal sector, hence the reason for its choice

1.8 Limitations of the Study

The study considered the following as the study limitations:-

- 1) Some of the respondents were not willing to disclose personal information regarding the uptake of health insurance and or socio-economic factors acting as barriers to uptake of health insurance in the informal sectors. However, this was mitigated by sensitizing the respondents of the objectives of study and ensuring them of confidentiality of the disclosed information. In addition they were assured that the information disclosed will be used only for the purposes of the study.
- 2) Some of the respondents were semi-illiterate and were not be able to fill the questionnaire. The study enlisted the help of research assistants who are versed with local language to explain to them the objectives of the study and the questions in the questionnaire.

1.9 Assumptions of the Study

The study considered the following three basic assumptions. First, it assumed that some of the respondents were subscribed to some form of health insurance at the time of the study. Secondly, the respondents were ready and willing to disclose confidential information regarding their socio-economic status and uptake of health insurance. Finally, the respondents are interested in knowing new health financing mechanisms that would help them in reducing OOP and improve their access to quality health services.

1.10 Definition of Significant Terms.

Age: refers to number of years lived by a respondent

Awareness: refers to whether the respondent has the relevant and correct information on registration procedures, premiums and benefits of insurance

Education: refers to the highest level of schooling that the respondent has attained

Gender: refers to whether the household head is male or female

Household size: refers to the number of people living in a homestead under one household head

Income: refers to the amount of money received as earnings from farming, small scale business or any other source

Marital status: refers to whether the respondent is single, married, separated or divorced

Employment status: refers to whether the respondent is in gainful engagement.

Catastrophic health expenditure: Refers to costs arising from treatment of an illness that is extremely high relative to individual or household income

Enrollment: Enrollment refers to the official act of entering into the membership list of an insurance scheme.

Informal sector workers: Informal sector refer to persons working outside the formal sector and mainly as small-scale traders and in small scale agricultural production

Uptake of health insurance: Uptake of health insurance refers to the enrollment of people into health insurance scheme.

Utilization: Utilization refers to the amount of healthcare services consumed after enrolment into health insurance scheme

Social Welfare Group: Refers to cooperatives and merry-go-round groups

1.11 Organization of the Research Report

This research project report is organized into five chapters. Chapter one (1) is the introduction, which outlines the context of the study ,including the background, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study ,delimitations of the study, basic assumptions of the study, and definition of key terms. Chapter two (2) is the review of the related literature with regard to the study. This is reviewed under subsections: health financing system in Kenya, factors influencing uptake of health insurance, conceptual framework and summary of literature reviewed. Chapter three (3) provides the research design and the methodology used in carrying out the study. In this section, there is also a discussion on sampling techniques, research instruments, and procedures of data collection, data analysis techniques and the rationale for choosing them. Chapter Four(4) covers the data analysis, presentation and findings of the factors influencing the uptake of national health insurance in the informal sector in Ithanga division, Muranga county Kenya .Chapter five(5) covers the summary of the findings, discussions, conclusion, recommendations and suggestions for further research

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter was to review the literature related to the topic of the study and focused on the following areas: health financing in Kenya, and the factors influencing uptake of health insurance in the informal sector. The issues discussed include influence of demographic factors, level of education and economic factors and awareness of health insurance.

2.2 Health financing system in Kenya

Mobilizing adequate financial resources necessary for achieving reasonable standards of health for the growing population in both urban and rural Kenya remains a major challenge as the country strives to achieve all the health-related millennium development goals. Kenya has adopted a mixed health financing structure that includes contributions from Government, private employer schemes, NGOS, community-based schemes and out-of pocket (OOP) by individuals and households. The total public health expenditure for health for the period 2005/2006 was only 5.2 percent of the total government expenditure, which is far below the 15 percent which was the target set by African heads of state in the Abuja declaration of 2000. Delloitte (2011). One of the key concerns however is the high OOP and overreliance on donors. According to the National health accounts (NHA) for the year, households funded 29.1 percent of the total health expenditure, donors contributed 18.2 percent, central government contributed 39 percent, private health insurance schemes 5.4 percent and NHIF contributed only 3.7 percent (Cenfri, 2010).

In its efforts to reduce the high OOP and donor dependency, the government has been attempting to review financing strategy to reduce inequality in access to the poor segments of the society with the aim of achieving universal health care and conform to article 43 of the constitution that says that every Kenyan has a right to quality and affordable healthcare. One

of the proposed strategies is the transformation of NHIF to NSHIF and uses it as the vehicle for extending coverage to all Kenyans. In sessional paper no.7 of 2004 on universal health coverage, the proposal was to shift from the predominant OOP and tax funding to using of prepayment schemes (insurance). The government was to pay contributions for the poor while also restructuring the management of the Fund. Under vision 2030's social strategy the aim of reducing inequalities in healthcare access is given prominence, where one of the flagship projects under the social pillar includes "creating a National Health Insurance Scheme in order to promote equity in Kenya's health care financing. Gok (2012).

2.3 Demographic factors and their influence of health insurance

In this section, demographic factors and their influence on health insurance will be discussed. The demographic characteristics will include age, gender, marital status, household size and presence of children in households.

2.3.1 Age and its influence on uptake of health insurance

Bhat and Jain (2006) in a study investigating the factors affecting the enrollment of low and middle income groups in the Kupra health insurance scheme in Anand district in India found that the age was one of the key demographic factors influencing demand for health insurance. Higher age groups had a higher probability of purchasing, but at lower age groups, the age of the respondents was not significant. The researcher attributed this to the aged being more mature and able to understand their risks and therefore using health insurance to minimize their risks and vulnerability.

In a study on uptake of health insurance among women in Ghana by (Edward, 2009), women aged over 40 years were found to be more likely to enroll to compared to those in lower age ranges, the reason being that as people advanced in age their health stock depreciates at an increasing rate thus inducing increased investment in health which may include health insurance. According to (Harmon and Finn,2006), age may act as an important determinant of the propensity to insure because it is associated with high

indirect vulnerability, higher medical consumption and possible increased stock of wealth .

Mhere (2013) while investigating the non-participation in health Insurance schemes in Gweru urban area in Midlands province in Zimbabwe found that age was a significant determinant of enrollment and suggested that as people aged, they had a better sense of responsibility, had more knowledge and may also have acquired earthly treasures and wealth that may trigger responsibility which may include the need to take care of their health needs. However, the researcher observed that as age further increased, the likelihood of uptake was lower, suggesting that as people got past their productive years, they became less careful about their health and may have acquired more wealth to take care health needs. Aged parents may also have had grown-up children who had taken over the responsibility of health care for their aged parents.

In a study on enrollment into Nigeria's National Health Insurance Service (NHIS), Aboyomi (2012) found that aged farmers in Osun state had a lower probability of enrolling. Aged people were likely to have large family sizes and many wives who were not covered in the health insurance scheme. Furthermore, the aged many lack the financial resources, education and motivation to enable them subscribe into the health scheme.

In an evaluation of enrolment among different socio-economic groups into Ghanas' national health insurance service using household surveys in Nkoranza and Offinso districts it was found that children and those aged one 70 years were more likely to enroll compared with those aged between 18 and 49 years. Enrolment was more likely if the individuals was female, had reported chronic illness, belonged to a household headed by a female and in a household that was participating in a community solidarity group . The researcher concluded that the policy in the scheme where those aged under 18 years and those over 70 years aimed at encouraging enrollment had not been very successful in that many in the poorest groups were not yet enrolled due to poor implementation of the policy . Chankova et al, 2009

In Kenya, all persons aged over 18 years and in possession of a national identify card can register in the National Hospital Insurance Fund, with the membership card covering the principal contributor, one spouse and all children in the family aged below 18 years.

Children aged over 18 years and in a full time educational institution are also eligible for coverage under the parents cards. Unlike in private health insurance organizations, NHIF does not have an upper age limit, implying that aged in rural and urban areas can enroll irrespective of their health status as long as they can afford the monthly premiums of Ksh160 per month.

2.3.2 Gender and its influence on uptake of health insurance

WHO (2008) in its key report on social determinants of health notes that gender biases and inequalities are reflected in unequal access to material and non-material resources, reduced decision making power, unfair division of work and possibilities of improving one's life. The report further says that "in the health sector gender power relations translate into different access to and control over health resources within and outside families, unequal division of labor in the formal, informal and home-based parts of the health care system. Empirical studies on health insurance carried out in various parts of the world clearly reflect the gender differences in access to health and health insurance.

Sabine Serceau (2012) in a study of Indias RasthriyaSwashyaBimaJohana (RSBY) health insurance scheme reported that male members enrolment was at 60% compared to 40% women. The low enrolment was attributed to the disadvantaged position of women since it was husbands, as heads of households who made decisions in enrollment. The women who had low literacy and lacked information on RSBY continued to rely on their husbands for decisions on enrolment and utilization of their insurance cards.

In a study carried out by (Boateng and Awunyor-victor, 2013) in the volta region in Ghana gender was found to be a significant determinant of enrollment into Ghana's National Health Insurance Services with females being more likely to renew their health insurance compared to the males in the region. In explaining the possible reasons

possible reasons for the differences, the researchers argue that women's psychological makeup, vulnerability and their role as care-givers for their children and sick members of the family makes them have a positive attitude on health Insurance decisions compared to the males.

Cheryl(2000) carried out a study to examine factors associated with gender differences in health care access in central Harlem, New York city in USA. The findings were :- 86% of women had private or public health Insurance while only 74% of men were covered , there were no significant difference in proportions with private insurance with women enrolled at 37% while men were at 33%,.The insured in Harlem tended to be younger men and of lower incomes and higher coverage for women who worked fulltime. In addition marital status and having children did not affect the probability of being covered in health insurance schemes. The researcher noted that the gender differences in enrollment were as a result of economic barriers since women in the low income communities were more likely than men to have full time jobs that offered health insurance coverage. Extending insurance coverage for men in low-income was therefore commended as a way to reduce gender disparities in access to healthcare.

2.3.3 Marital status and household size and their influence on uptake of health insurance

Studies carried out in different countries have shown that marital status and the size of households plays a role in enrollment decisions .Bourne and Maureen(2010 found that enrollment in health insurance in Jamaica was influenced by social standing, income, marital status ,retirement benefits, living conditions and the number of males in the household. Married respondents were found to be more likely to purchase health insurance .Kirigia *et al* (2005) in a study of health insurance in South Africa also found that :- marital status had a positive effect on ownership of health insurance .The researchers noted that the higher demand by married people may be explained by the need to protect the children , being more concerned about high health expenditures and higher combined incomes. On

households size , there was a negative effect on the likelihood of health insurance .Household size may have the effect of reducing the incomes.

Doyle and Panda (2011) examined the health insurance uptake in households which were involved in Community based health insurance schemes in northern India, focusing on socio-economic, demographic details , household consumption, asset holdings, health status and membership of self help groups. Larger households were more likely to purchase health insurance, which was attributed to the practice of multiple nuclear family units living together in single dwellings and therefore having multiple independent decision-making units. Younger household heads were also more likely to take up health insurance compared to household heads who were over 55 years and educated household heads who had attended at least primary school were more likely to join , compared to those with no formal schooling.

Savage *et al*(2008) investigated the role of family formation, focusing on young women under 30 year and the effect of children on decisions to enrollment into health insurance in Australia and found that :-women who desired additional children in the future were more likely to have insurance compared to women who already had the desired number of children. Wanting more children raised the probability of insurance by 3 percentage point for those without recent children and closer to 5 percentage points for those who had children in earlier years. Households which desired additional children in future were 7.4 percentage points more likely to insure compared to 5.6 percentage points for the women who had finished the family formation . Other factors that influenced the enrollment were marital status, perceived access to hospitals and location.

Fang *et al* (2012) in their study on health Insurance coverage and medical expenditure in Taiwan observed that households with smaller family sizes and higher incomes were more likely to have higher coverage in both public and private health insurance schemes. However , households with chronic diseases are more likely to also have private and public health Insurance which was associated with higher out-of- pocket expenditure .The

general conclusion of the study was that although Taiwan has achieved considerable achievements in enrolment, reduction of out-of-pocket expenditure remained a challenge.

2.4. Level of Education and its Influence on Uptake of Health Insurance

Education is important in shaping future occupational opportunities and earning potential by providing knowledge and life skills that allow better-educated persons access to information and resources to promote their health. This is emphasized by Ensor and Cooper (2004) who argue that education, measured by the duration of schooling is correlated with good health through better lifestyles and providing consumers with basis for evaluating they are their dependants require treatment. Education also influences people's ability to assimilate information with educated women, for example, being more effective at improving their own well-being and that of their family by improving their income-earning potential, decision making autonomy, control of their own fertility and participation in public life. According to Fienstein et al (2006), education is an important link to health and its determinants including health behaviors, use of preventive services and general attitudes to risks. Those with many years of schooling therefore tend to have better health, well-being and healthier behaviors.

Mhere (2013) carried out a study to investigate the non-participation in health insurance schemes in Zimbabwe and found that education level as reflected in additional years of schooling increased the chances of participation. The researcher attributed this to educated persons being more enlightened on the well-being of their families and the possibility that the respondents had covered some aspects of healthcare and health insurance as part of their learning.

In a study examining the ownership of health insurance among women in Ghana, Akwasi and Joshua (2013) compared uptake in the coastal, central, and the northern zones, and found that there were socio-economic and special differences in insurance subscriptions among women. A key finding was that women who had partners who were better educated and wealthier were more likely to have purchased health insurance compared to the less educated and poorer Ghanaians. The spouses of the educated women were more likely to be

employed in the formal sector where deductions were effected at source Kirigia *et al*(2005) also found that women in South Africa who had attained at least secondary level education were two times more likely to have a health insurance policy compared to those with lower levels of education and noted that education may have had an effect on respondent's knowledge, skills and their productivity.

Ghosh (2013) in a study on awareness and willingness to pay for health insurance in Darjeling district in India and observed that educated people were less likely to pay higher amounts for health insurance. The educated had higher incomes and invested in other modes of savings which would give them higher returns. Bending and Arun (2011) in their study of determinants of enrollment in micro finance institutions (MFIs) and health insurance also found that household heads who had no formal primary or secondary education were statistically less likely to participate in health insurance in Sri-Lanka. Due to their lower incomes and fewer income earning opportunities, people with lower education had higher inclination to insure their families.

2.5. Influence of economic factors on uptake of health insurance

In this section, influence of economic factors on uptake of health insurance will be discussed. Literature on economic factors such as level of income, level of premiums & collection mechanisms and employment will be reviewed.

2.5.1 Influence of level of income on uptake of health insurance

Bennet *et al* (1997) analyzed 82 health insurance schemes in developing and developed world and noted that health planners may encounter difficulties in assessing incomes from informal sector workers. The incomes fluctuate over time, and often untaxed, making it difficult to collect insurance premiums at source. In rural areas where agricultural employment persists, cash incomes are seasonal and liquidity constraints persist for much of the year. Sudharshan and Sethuraman (2001), also note that workers in informal sector face inadequacy and variability of incomes when their assets fail to generate

incomes due to market related risks and uncertainties. The demand for products is often seasonal and unpredictable due to natural disasters political disturbances , business cycles and changes in the environment in the macro-economy. Furthermore, lack of legal recognition, lack of access to credit and non-availability of inputs may impede access to markets and lead to informal sector businesses remaining small and remaining exposed to vulnerability and insecurity.

In an evaluation of the informal sector employment and social protection ILO(2000) called for a better understanding of the structure and function of informal sector especially on the myth that informal sector is synonymous with poverty. The sector is heterogeneous with some of its activities with low incomes while others are profitable and earning incomes well above those in the formal economy. The urban informal sector has its own networks of formal services marketing and welfare schemes that rely on kinship, occupational , family and neighborhood ties that are effective.

Kirigia *et al* (2005) examined the relationship between health insurance enrollment and the economic, demographic and educational characteristics among women in South Africa and found that the proportion of people who had health insurance rose as household income increased with coverage of those earning 1-950 Rand being at 6.3% coverage while those earning above 7600 rand per month having a coverage of 90.75, implying that intervention at macroeconomic level to boost disposable incomes in South Africa would boost enrollment in health insurance.

In exploring the social economic status and health insurance in Ghana, Sarpong et al(2010) used proxy measurements of well-being such as water supply, access to electricity, nature of dwelling to classify households as low, intermediate and high socio-economic status. The findings were:- only 21% of poor households were enrolled compared to 60% who were classified as belonging to high socio-economic status. The researchers however acknowledged that the Government of Ghana had recognized the disparities in health Insurance and healthcare and set the subscription fees depending on peoples

ability to pay and also exempted women from paying premiums by reimbursing health providers for deliveries.

In a study in a District in India, Bhat and Jain (2006) analyzed the demand for private health insurance among lower and middle income groups and found that households with Insurance had higher incomes than those which were not insured. In addition, households reporting higher healthcare expenditures as a percentage of total household expenditure had a higher probability of purchasing health insurance. However, the researchers observed that the level of income and health insurance relationship was non-linear, in that as income increased, health insurance increased but after a certain point, the relationship between income and health insurance became negative, indicating that as incomes increased, households allocated their resources to other uses, purchased less health insurance, and were willing to retain the health risks.

According to Dalaba *et al* (2012), higher enrollment of people in higher income groups is consistent with consumer theory that considers health insurance as a normal good with positive elasticity of demand. The researcher came to this conclusion after observing in a study in Ghana that richer households were more likely to enroll, with those in the poorest Quintile constituting 34% of the uninsured while only 8% in the rich Quintile were uninsured. In a different study in Ghana, Ebenezer and Anthony(2014)investigated the demand for health insurance in Kumasi metropolis, focusing on both formal and informal sector employees, and also found that high income earners were 7% more likely to be enrolled compared to those with low incomes.

2.5.2 Influence of level of premiums and collection mechanisms on uptake of health insurance

Insurance schemes require payments, in form of one-off or periodic premiums to create a pool (fund) that should cover administrative and claims expenses. The challenge however is in setting levels of premiums that are affordable to the vulnerable populations.

According to Hsiao W. and Shaw R(2007), designing and implementation social health insurance schemes in developing countries for extending coverage to the non-poor, the self employed and those in the informal sector may be difficult because unlike those in the formal sector whose contribution could be deducted from salaries, the informal sector workers may not always be in organized groups through which contribution can be collected. Gina *et al* (2012) also observes that implementing of health insurance reforms in Africa and Asia faces the challenge in the collection of premiums due to high administrative costs and resistance by people in paying upfront for services they might not need. Challenges in revenue collections, have been tackled in some countries through innovative strategies to improve enrollment by using information technologies and partnerships with community groups. Kenya's National Hospital Insurance Fund (NHIF) and Phil health in Philippines are cited as programs using mobile payment platforms to collect contributions.

Gina and Sapna (2008) emphasize the importance of setting premiums taking into consideration the target populations willingness to pay and the actual cost of the proposed benefit packages and not necessarily on the basis of actuarial calculations as failing to get the right price may lead to future increase in premiums which may in turn lead to decreased in enrollment and distrust among the schemes beneficiaries. Adopting collection mechanisms to suit informal sector workers, for example by collecting premiums during harvest periods when rural farmers have money to pay the premiums and partnering with self-help groups, cooperatives and microfinance organization to assist in effecting deductions from farmers and teachers earnings. In Yeshavin insurance scheme in India, members are allowed to pay premiums in kind when they are not able to pay in cash.

According to Logan and William (2002), the factors considered in determining premiums in health insurance schemes include :- expected cost of benefit packages, administrative cost, expected utilization, market prices and affordability of the premiums to the consumers. In assessing the willingness of potential enrollees to pay, focus groups and household surveys may be used to ascertain the interest of a population and how much they are ready to pay. Furthermore, affordability of premium is influenced by the frequency and

timing of payment ,hence demanding annual payments may limit participation across various income groups .In the case of women, affordability's of the premiums is limited by their limited control on how household income is spent.

Asuming (2013)carried out a study to investigate the extent to which levels of premiums, incomplete information and remoteness of WA West district in Ghana influenced enrollment into Ghana's Health insurance scheme .The study involved an education campaign on registration procedures, premiums and benefits of insurance. Randomly selected communities here assigned to receive the equivalent of one third , two thirds or the full cost of the health insurance and after a seven months intervention period , it was found that providing 33% of subsidy of premiums doubled enrollment, showing that demand for insurance is price elastic. Providing convenience in enrollment by registering communities near their areas of residence did not have effect on uptake , suggesting that most important consideration for the people was the level of premiums. Similar findings were found by Freeman and Zang (2011) in their study in Akatsi district in Ghana where the non-insured said that affordability of premiums was a major barrier to their enrolment. The researcher recommended strengthening of Ghana's exemption policy for the poor and the vulnerable, children aged under 18 years and people aged over 70 years.

In Kenyans National Health Insurance fund, the monthly premiums for those in the formal sector range from Ksh30 to a maximum of ksh320 and those in the informal sector pay a flat rate of Ksh160 per month. The contribution rates for both formal and informal sectors have not been increased from 1998. Attempts by NHIF to increase the rates by 400% to cover outpatient services in the then proposed NSHIF were resisted by private insurance companies and doctors who argued that the proposed rates would lead to exclusion of the poor while private insurance companies feared that the new premiums would erode their client base. Cenfri(2010). Informal sector contributors in the NHIF scheme can remit their contributions individually through National bank of Kenya Cooperative Bank of Kenya, Kenya Commercial Bank and M-pesa while those in organized

groups can pay through the groups registered code, on quarterly (3months) ,semiannually,(6months) or an annual basis (12 months).However, late payments of contributions attract a penalty equivalent to five times of the late contributions. NHIF(2012).

This study will investigate the extent to which the level of premiums and the collection mechanisms adopted by NHIF influence uptake of health insurance in the informal sector.

2.5.3 Employment status and its influence on uptake of health insurance.

In most of the studies on health insurance, the researchers find that the uptake of health Insurance is influenced by the changes in employment status, the size of the employing entity, the type of employer and the macro-economic environment .

Perry and Rosen(2001) studied the low enrollment of self employed compared to the wage-earners in the United States and found that the self employed were significantly less likely than wage earners to be holders of insurance policies. Only 51.4 percent of self employed were covered compared to 74.1% who were wage earners. Children of self employed workers were also less likely to have health insurance coverage. Robert and Rebecca (2005) in their study on enrollment of minorities , part-time workers, and those employed in small firms in the United states found that coverage was influenced by employment status, and size of the employer. Those who were employed were 78.5% likely to be insured compared to 61.7% who were not in the labor force. Those who remained unemployed for over one year , in part-time work and those working in small firms of less than 10 employees were less likely to have health insurance .Furthermore , 20.7% of those who moved from government employment to become self-employed lost their health insurance. The researchers concluded that job loss and movement to small employers were critical factors in explaining loss of health insurance in an economy dominated by employer-sponsored insurance.

Jill Bernstein (2009) in a review of the impact of economy on healthcare in the United States argues that the economy shapes the interactions among employment, health insurance coverage, healthcare costs, access to health care and health outcomes. When

employer-based coverage was constrained due to economic downturns, employers shifted premiums costs to the employees, leading to many employees opting out of employer-based coverage. Furthermore in economic downturns, more people found work in low-wage, temporary, part-time and retail jobs which had less comprehensive employer-based insurance coverage.

Stan Dorn(2004) analyzed health Insurance coverage in the United states focusing on groups of uninsured employees of small business , low-income families, near elderly, children and immigrants and found that 49% of the uninsured were either employed in companies with less than 25 employees or were self employed. Among companies with less than 10 employees, only 52 percent offered health coverage while those with more than 200 workers offered health insurance .Another key finding was that between January 2002 and July 2004 unemployed workers with incomes below the federal income level, 56% of them lost their insurance cover only 6 months after they lost their jobs. The author recommended specific interventions to address the needs of the vulnerable including tax credits and subsidies to small companies to subsidize low-income workers.

In a study on determinants of access health to health insurance and utilization in Russia, Perlman *et al* (2009) found that although coverage had increased from 88% to 94% from 2000 to 2004, 10% of working age men still remained uninsured with those still remained uninsured with those who were unemployed were 3 times more likely to be uninsured. The self-employed men were also less likely to lack health insurance cover raising questions on the equity aspects of the healthcare scheme.

2.6 Influence of awareness on uptake of health insurance

Ombeline and Gelade (2012)in the their review of demand for health insurance in low-income countries observed that the concept of insurance which involves spending money in return for an uncertain payout in future is fairly new in low income countries. Newly insured people may expect to receive their premiums back when no payout or claim occurs,

hence the need for intensive insurance literacy training and use of peers in spreading information on insurance products.

Gina and Sapna (2008) explored the challenges of introducing insurance among the poor and informal sector populations in low income countries and noted that it is important to build trust in the target communities to convince them that health insurance offers financial protection. On awareness, they observe that informal sector populations are generally unfamiliar with the concept of health insurance and may be suspicious of insurance because of past experience of others with other types of insurance and are also uncomfortable paying upfront for services they may not need while not getting any benefits themselves, hence the need to work with trusted community leaders and use appropriate communication mechanisms to build knowledge and trust in the organization providing the proposed health insurance product. At the community level, community-based organizations, microfinance organizations may be used as entry- points when introducing health insurance in the informal sector. Traditional channels of communication may not be effective in reaching the poor, rural and informal sectors in the developing world, hence the need to devise effective messages for relaying the benefits of health insurance using social marketing techniques including, use of local champions to speak to villages on benefits of health insurance. In India the micro insurance academy uses local leaders to organize activities for health insurance education and group exercises with the help of educated health insurance facilitators.

According to Churchill and Cohen (2006),marketing of insurance to the poor presents challenges because even for those who have had access to insurance, their experiences is often negative due to delays in claims processing , and rejected claims . Furthermore , poor people with low literacy and living from day – to- day may not understand why they should spend the little cash available to cover future events that may never occur. To counter the negative anti-insurance arguments ,the marketing messages should emphasize the key areas of solidarity, optimism , trust and social protection while reminding the poor that they are vulnerable and would be worse off without managing risks through

insurance. To improve understanding of insurance, simple and low tech techniques , street theatre , video , pictorial and video presentation can be used. In the social marketing process , the sales agents should assist potential clients towards concluding that health emergencies are expensive by helping low income households recognize their risks and how insurance would assist in managing the risks .

Platteau and Ontiveros (2013) in an attempt to understand the factors underlying low uptake and renewal rates of health insurance in Maharashtra State in India conducted a study understanding of insurance concepts and the level of information that people had on insurance. The findings of the study where : low enrolment and renewal was influenced by deficient information on the functioning of the scheme and poor understanding of insurance concept with most respondents citing lack of information on how to use the insurance. Also noted was that when enrolled members received benefits that were lower than the insurance premiums paid, they were less inclined to renew their insurance . The study demonstrated the need for continuous communication and the importance of the physical presence of insurance agents in the field to provide information on Insurance products through sustained awareness campaigns.

Jangati (2012) carried out a study of awareness of health Insurance among residents of Hyderabad city in Andhra Pradesh and found that :- 65.5 percent had no idea about it. 22 percent of males were aware while 11.5 percent of females were aware about health insurance. On employment status, it was found that self-employed people were less aware about health insurance compared to government and private companies. Those with higher levels of education were more likely to be aware of health insurance. The researcher called for extending effective information and communication activities to improve peoples' understanding about insurance.

In a study carried out in Bangladesh focusing on informal sector workers, Khan and Ahmed (2013), investigated the impact of offering education on health insurance using weekly group discussion on health expenditure health insurance and health insurance the

key focus of the study was to know whether literacy gaps and lack of knowledge influenced the willingness of informal sector workers the willingness to pay (WTP) after the educational intervention period was 33.8 percent higher among the informal sector workers who joined the education sessions compared to those who had not joined the session .The general conclusion of the study was that educational interventions can be used to increase demand for health insurance by offering modules that are comprehensive and covering health pooling, health insurance, benefits packages and the strength of solidarity.

Mathauer *et al* (2008) assessed the factors affecting the demand for health insurance, focusing on enrolment into NHIF. In the study using discussions with members of taxis associations, farmers, self- help groups from different parts of the country, it was found that lack of knowledge about enrolment procedures and the basic principles of insurance was a major barrier to enrollment. Many of the participants had not heard of the health insurance and appeared to expect to be paid back the premiums of they had not fallen sick for a long period , reflecting their poor understanding of health insurance as a way of pooling and sharing risks. The researchers concluded that informal sector workers did not know about NHIF but were ready to enroll when correct and well packaged information was provided for persons at different levels of education.

2.7 Conceptual Framework

A conceptual framework explains the relationship and possible connection between variables (Kombo and Tromp, 2011). According to Orodho (2009), conceptual models are ways of relating factors that influence a particular outcome in a pictorial or diagrammatic way. The independent, dependent, moderating and intervening variables for the study are linked together in figure 1.

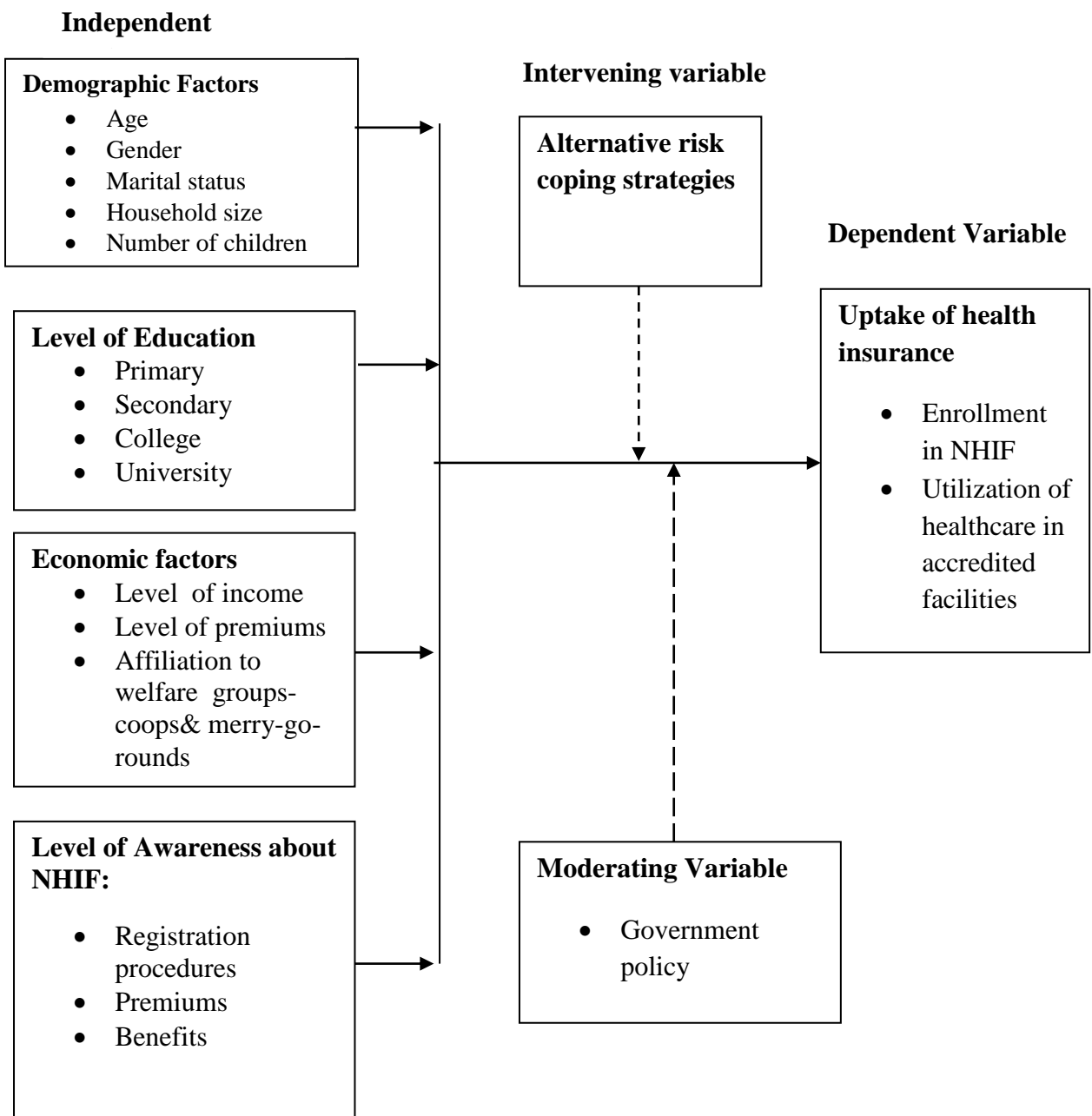


Figure 1 Conceptual Framework

The study considers the demographic factors, level of education and economic factors and level of awareness as the independent variables while the uptake of health insurance is the dependent variable. The demographic factors are conceptualized as age, gender, marital status, household size and number of children in a household. The other independent variable is the Level of Education of the Household head. The indicators for the economic factors independent factor are level of income, level of premiums and affiliation to social welfare groups.. The last independent variable will be the level of awareness about NHIF products and services. The indicators of the dependent variable will be the enrollment rate and utilization of NHIF healthcare cover. The intervening variable is the alternative risk coping strategies and government policy is the moderating variable..

2.8 Summary of literature reviewed

The literature reviewed has indicated that although various countries are at various stages in enrollment of informal sector workers into health insurance schemes challenges still remain due to low social economic status, education levels of premiums and low awareness of benefits of health insurance. Furthermore, it is evident that most of the studies have focused more on formal sector contributors who are already enrolled into mandatory schemes. Most of the studies have been carried out in other countries other than Kenya. The studies have concentrated more on socio –economic factors influencing uptake without addressing how the awareness of National Health Insurance Schemes available to informal sector contributors influences the rate of uptake of health insurance. One of the key areas not adequately covered is the awareness levels of the specific products available to NHIF contributors in Kenya. This study filled this gap by assessing the levels of awareness about registration procedures, premiums and the benefit packages. The study focused on a rural area (representing all rural areas in Kenya) which has been under-represented in the health insurance coverage.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology which was used for the study. Specifically, it explains the research design, target population, sample and sampling techniques, piloting of instruments, validity and reliability of research instruments, methods of data collection, and methods of data analysis, ethical considerations and the methodology matrix.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy procedure. It is the conceptual structure within which research is conducted. It constitutes the blue print for the collection, measurement and analysis of data (Kothari,2004). The design therefore provides the glue that holds the research project by showing how all the parts will work together in order to help answer the research question (William, 2002). The research adopted a descriptive survey design. According to Mugenda and Mugenda (2003), a descriptive design allows the researcher to describe record, analyze and report conditions that exist without manipulation of variables. It also helps to determine specific characteristics of a large group (Kombo and Tromp, 2006). It involves collecting original data (often in the form of a questionnaire) for the purposes of describing a population which is too large to observe directly. The design was chosen because the study collected information from a large population and reported on their current uptake of health insurance in order to answer the research questions.

3.3 Target Population

According to Manoharan (2009) target population is all the members of a well-defined class as people, events or objects, events or objects to which a researcher wishes to generalize the

results of the research study”. The study was based in Ithanga division in Murang’a County. The study targeted 19,359 residents: 9330 males and 10,013 females of the Division in 4544 households (KNBS and SID, 2013). The division has six sub-locations namely: Kirathani, Kaguku, Mianyani, Kwa Mukundi, Mugumo and Thungururu.

3.4. Sample and Sampling Procedure

In this section, the sample used for the study and the sampling procedure are discussed. Chandra (2003) defines sampling as the selection of a proportion of population such that selected portion represents the population adequately. A sampling design is a definite plan for obtaining a sample from a given population (Kothari, 2004). Ithanga Division was chosen because it is in a rural setting and health insurance in Kenya has largely targeted those who largely live in urban settings. In addition, it is one of the poorest Divisions with some of the worst health indicators in Murang’a County. The Division has diverse agricultural and small scale businesses and is therefore likely to represent the informal sector, hence the reason for its choice.

3.4.1 Sample Size

According to Kothari (2004) a sample is the number of items selected from the universe to constitute the sample” and recommends that the sample size should be optimum to fulfill the requirements of efficiency, representativeness, reliability and flexibility. The determination of the sample size was guided by the Krejcie and Morgan (1970)(Appendix II). According to the table, for a study population of 4544 households, an optimum sample size of 354 is appropriate.

3.4.2. Sampling Procedure

The study used stratified sampling technique to select the number of households from each sub-location. The sub-locations formed the strata. Systematic sampling was used to select the households to participate in the study. The n th household was chosen to participate in the study. The n th household depended on the number of households in each sub-location.

Proportional sampling was used to determine the appropriate representation for this study. Proportional sampling requires that the researcher be able to identify the percentage of the population each stratum contains. The researcher then samples the population proportionally, based on these percentages (Dempsey and Dempsey, 2000). This was determined using the following formula:

$$\frac{\text{No of households in each stratum}}{\text{Total no.of house holds}} \times \text{Sample size (354)}$$

The table 3.1 shows the sampling table.

Table 3.1 Sampling Table

Division	Sub-location	Number of households in the sub-location	Sample
Ithanga	Kirathani	760	$760 \div 4544 \times 354 = 59$
	Kaguku	1123	$1123 \div 4544 \times 354 = 87$
	Mianyani	661	$661 \div 4544 \times 354 = 52$
	Mugumo	649	$649 \div 4544 \times 354 = 51$
	KwaMukundi	537	$537 \div 4544 \times 354 = 42$
	Thungururu	814	$814 \div 4544 \times 354 = 63$
Total		4544	354

3.5 Data Collection instrument

The researcher used as a questionnaire as the instrument for collecting primary data from the respondents. It comprised of both open ended and closed ended questions. The open ended questions were useful in collecting the qualitative data and gave the respondents an opportunity to give insightful information that may not be adequately captured using closed ended questions. According to Mugenda and Mugenda (2003,) open ended questions may

“stimulate a person to think about his feeling or motives and to express what he considers to be most important”. The open ended questions gave the respondents the freedom in answering the questions. The questionnaire was divided into five sections, each addressing the separate variables in the study.. The questionnaire was filled by the household head. Section A addressed the demographic characteristics of the respondents which included gender, marital status, age, size of household and number of children. Section B was on the level of education. Section C dealt with the economic factors, including main economic activity, the estimated household incomes, membership of social welfare groups and affordability of monthly insurance premiums. Section D dealt with the level of awareness of the health insurance, including sources of information, enrollment status, benefits of insurance, reasons for non enrolment, insurance trainings and visits by NHIF staff in community. Section E was on uptake and utilization of health insurance, with questions on admissions and mode of payment of hospital bills.

3.5.1 Piloting of the instrument

A pilot study was undertaken in the neighboring Makuyu Division which has almost the same social-economic characteristics as Ithanga division. A sample of 35 representing 10% of sample size of 354 was used. Mugenda and Mugenda (2003) argue that, 10% of the study sample is enough for piloting a study. The piloting was important in order to incorporate the comments and suggestions of the respondents and in correcting any deficiencies and vague questions in the questionnaire and thereby enhance the reliability of the instrument. Mugenda and Mugenda (2003). Piloting also highlights the weaknesses in the questionnaire, including ambiguous phrases, complex language and redundant questions (Neville, 2005). The Piloting enabled the researcher to be familiar with the research and identifying the items in the questionnaire that required modification. After the pilot study, the questionnaire was revised and used in the main study.

3.5.2 Validity of the instrument

Validity is the degree to which an instrument measures what is supposed to measure (Kothari, 2004). According to Orodho(2003), validity is the degree to which a test measures what it is measuring and the degree to which the results obtained from the data analysis represents the phenomenon under investigation. Creswell (2003) notes that validity is about whether one can draw meaningful and useful inferences from scores on the instrument. It is therefore about the usefulness of the data and not the instrument. Content validity yields a logical judgment as to whether the instrument covers what is supposed to cover. Content validity ensures that all the correspondents understand the items on the questionnaire. The validity of the instrument was therefore enhanced through appraisal and verification by the supervisor who is an expert and the necessary improvements were made to ensure that the questions in the questionnaire captured and measured what they were expected to.

3.5.3 Reliability of the instrument

Reliability is the degree of consistency that the instrument or tool demonstrates on repeat trials, that is, whether scores resulting from repeated use of the instrument are consistent. Reliability answers the question, “Are scores stable over time when the instrument is administered a second time?” (Creswell, 2003). To ensure reliability, the researcher used split half technique. This involved splitting the tool into two equal parts and each part being treated as a separate measure. Each part was then scored accordingly and the scores correlated. The spearman-Brown Prophecy formula was then be used to estimate the reliability. A reliability value of 0.89 was obtained. This value was higher than the conventionally accepted value of 0.70 or higher, hence it was accepted (Creswell, 2003).

3.6 Data collection procedures

Data was collected from the 354 households for a period of one week. Three research assistants aided in data collection after training for two days. The training sessions involved briefing on the purpose of the study, meaning of terms used in the study and the importance of maintaining ethical standards when collecting data from the respondents. The researcher

and assistants paid a visit to the homestead beforehand and requested the household head to confirm the convenient time and date for the interview and completion of the questionnaire. At the appointed time, the questionnaire was administered. The assistants were hired from the community so as to reduce suspicion and cater for the communication barriers.

3.7 Data Analysis Techniques

The collected questionnaires were first examined by the researcher to confirm completeness and consistency. The collected data was then coded to facilitate the grouping of the data into categories. Quantitative data was analyzed with the help of electronic spreadsheet SPSS Program Version 21.0 while qualitative data was analyzed thematically. The analyzed data was presented in frequency distribution tables for ease of understanding and analysis. Descriptive statistics such as percentages were used to analyze the demographic characteristics, level of education and economic factors and level of awareness their influence on uptake of health insurance. Cross-tabulation was used to assess the relationship between the various independent variables and uptake of health insurance.

3.8 Ethical considerations

A letter of introduction was obtained from Resident Lecturer at Thika Extra Mural Centre. It aided in processing of a research permit at National Council of Science, Technology and Innovation. After that, authority to collect data was obtained from the County Commissioner, Murang'a South District. More authority was sought from the Assistant Chiefs of the six locations of Ithanga Division. The principle of voluntary participation was strictly adhered to. The respondents were not coerced into participating in the research. The purpose of the study was explained to each household head. They were also assured of confidentiality and that the information obtained from them was to be used for the purposes of study only.

3.9. Operationalization of the Variables

The study conceptualized the operationalization of the variables as outlined in table 3.2

Table 3.2 Operationalization of the variables

OBJECTIVES	TYPE OF VARIABLE	INDICATORS	MEASUREMENT	TYPE OF DATA	ANALYSIS TECHNIQUES
To access the influence of demographic factors on uptake of health insurance	Independent (demographic factors)	Gender	Male or Female	Nominal	-Frequencies -Percentages -Cross tabulations
		Age group	Number of years lived	Ordinal	
		Marital status	Married, single, separated, divorced	Nominal	
		Household size	Number of household members	Ordinal	
		Children	Number of children in household	Ordinal	
To determine the influence of level of education on uptake of health insurance	Independent (Level of Education)	Level of education	Primary, Secondary, College, University	Nominal	-Frequency -percentages -cross tabulation
To access the influence of economic factors on uptake of health insurance	Independent (Economic Factors)	Household income	Estimated monthly income	Ordinal	Frequency -percentages -cross tabulation
		Main economic activity	Name of economic activity	Nominal	
		Affordability of premiums	Affordability premium	Nominal	
		Preferred payment	Stated payment period	Nominal	
		Affiliation to welfare group	Whether member or not	Nominal	
To establish influence of level of awareness on uptake of health insurance	Independent (Level of Awareness)	Awareness of registration procedures, premium and benefit	Whether aware or not aware	Nominal	-Frequency -percentages -cross tabulation
		Sources of information	Name of source	Nominal	
		Trainings and seminars	Whether trained or not trained	Nominal	
		Visits by NHIF staff and agents	Whether visited or not visited	Nominal	
Uptake of health insurance	Dependent (Uptake of health insurance)	Enrollment status	Possession of NHIF number/ Card.	Nominal	Frequency -percentages -cross tabulation
		Admission in hospitals	Admissions in hospitals	Ordinal	
		Utilization of card in payment of bill	Number of times cards used in hospital	Ordinal	

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF THE FINDINGS

4.1 Introduction

This chapter covers data analysis, presentation and interpretation of findings on the factors influencing the uptake of national health insurance in the informal sector in Ithanga division, Muranga county ,

Kenya, and is organized under the following subheadings:- questionnaires return rate, demographic factors, level of education, economic factors and level of awareness.

4.2 Questionnaires return rate

A total of 354 questionnaires were administered to household heads in the six sub-locations in Ithanga division but only 344 were completed representing a return rate of 97.175 percent.

4.3 Influence of Demographic Characteristics on uptake of NHIF

The demographic factors covered in the study were gender, age, marital status, size of household and number of children in a household. The study assessed the influence of the five demographic characteristics on uptake of health insurance.

4.3.1 Influence of Gender on Uptake of National Health Insurance

The study was designed to assess the respondent's gender on uptake of National Health Insurance. First, the study sought the distribution of the respondents by gender. The results are presented in table 4.1.

Table 4.1 Distribution of the Respondents by Gender

Gender of respondent	F	%
Female	170	49.4
Male	174	50.6
Total	344	100

Table 4.1 shows that the majority, 174 (50.6%) of the respondents were males while 170 (49.4%) were females. This shows that there is near gender parity in the distribution respondents in the study. The study assessed the influence of respondent's gender on uptake of National Health Insurance . Cross-tabulation was performed between the respondent's gender and uptake of . The results are presented in table 4.2.

Table 4.2 Influence on Gender on Uptake of National Health Insurance

Gender	Uptake of NHIF					
	With health insurance		Without health insurance		Total	
	F	%	f	%	F	%
Female	65	18.90	105	30.52	170	49.42
Male	50	14.53	124	36.05	174	50.58
Total	115	33.43	229	66.57	344	100

Table 4.2 shows that majority, 229 (66.57 %) had not enrolled with NHIF while 115 (33.43%) had enrolled. These findings depict the low uptake of NHIF in the informal sector. This calls for deliberate efforts to enhance uptake of NHIF among the residents of Ithanga Division in Murang'a County. The table further shows that 65 (18.90%) of the females and 50 (14.53%) males were enrolled. On the other hand, 124 (36.05 %) of those not enrolled were males and 105 (30.52% were females .Further analysis of the data shows that out of the total enrollment of 115, the enrollment of females was higher at 65(56.52%) compared to 50(43.48%) for males.

4.3.2 Influence of age on uptake of National Health Insurance

The study sought the distribution of the respondents by age. The respondents were asked to indicate their age and the results are as summarized in table 4.3.

Table 4.3 Distribution of the Respondents by Age

Age bracket (yrs)	f	%
18-25	32	9.3
26-35	85	24.7
36-45	61	17.7
46 and above	166	48.3
Total	344	100

Table 4.3 shows that majority, 166 (48.3%) of the respondents were aged 46 years and above, followed by 85 (24.7%) aged between 26-35 years, 61 (17.7%) aged between 36-45 years while only 32(9.3) of the respondents were aged between 18-25 years. This shows that the majority of the household heads were in their productive years and that they were most likely able to work and earn incomes for basic household needs and payment of health insurance premiums.

The first objective was to assess the influence of age on the uptake of NHIF. In order to achieve this, cross tabulation was carried out between age of the respondents and uptake of NHIF. These results are presented in table 4.4

Table 4.4 Influence of age on uptake of National Health Insurance

Age bracket (yrs)	Uptake of National Health Insurance (NHIF)					
	With health insurance		Without health insurance		Total	
	F	%	f	%	f	%
18-25	14	4.1	18	5.2	32	9.3
26-35	33	9.6	52	15.1	85	24.7
36-45	19	5.5	42	12.2	61	17.7

46 and above	49	14.2	117	34.0	166	48.3
Total	115	33.4	229	66.5	344	100

Table 4.4 shows that 49 (14.2 %) of the respondents aged 46 years and above had NHIF cover, followed by 33 (9.6%) whose were aged between 26-35 years, 19 (5.5%) were aged between 36-45 years while only 14 (4.1%) of the respondents were aged between 18-25 years. On the other hand for those without a NHIF policy, majority 117 (34.0%) of the respondents were aged 46 years, followed 52 (15.1%) aged 26-35 years, 42 (12.2%) were aged 36-45 years while the least 18 (5.2%) were aged 18-25 years.

4.3.3 Influence of Marital Status on Uptake of National Health Insurance

The respondents were requested to indicate their marital status. The results are summarized in Table 4.5.

Table 4.5 Distribution of the Respondents by Marital Status

Marital status	f	%
Single	62	18.0
Married	264	73.8
Separated	11	3.2
Divorced	7	2.0
Total	344	100

Table 4.5 shows that the married respondents, 264 (73.8%) formed the majority of the respondents, followed by 62 (18.0%) who were single, 11 (3.2%) who were separated and 7 (2%) who were divorced.. Marital status formed part of the demographic characteristic assessed. In order to assess the influence of marital status and uptake of National Health Insurance (NHIF) cross tabulation of the respondents' marital status and uptake of the National Health Insurance were performed. The results are presented in table 4.6.

Table 4.6 Influence of marital status on uptake of national health insurance

Marital status	Uptake of National Health Insurance					
	With health insurance		Without health insurance		Total	
	F	%	f	%	f	%
Single	19	5.5	32	9.3	51	14.8
Married	79	23.0	175	50.9	254	73.8
Separated	14	4.07	18	5.2	32	9.3
Divorced	3	0.9	4	1.2	7	2.0
Total	115	33.43	229	66.57	344	100

Table 4.6 shows that of those who had NHIF cover, majority, 79 (23.0 %) were married, followed 19 (5.5%) who were single 14 (4.07%) who were separated and only 3 (0.9%) who were divorced. This trend can be explained by married people being more likely to have dependants whose healthcare needs had to be taken care of through health insurance coverage. It is also likely that married persons had access to higher combined household income and were therefore able to afford premium payments. Similar results were observed among those who had no NHIF cover; majority, 175 (50.9%) were married, followed by 32 (9.3%) were single, next 18 (5.2 %) were separated while only 4 (1.2%) of the respondents were divorced.

4.3.4 Influence of household size on uptake of National Health Insurance .

The study sought to establish the respondents' household size and its influence on the uptake of the National Health Insurance. First, the study determined the distribution of the respondents' the size of their households. These results were presented in table 4.7

Table 4.7 Distribution of the respondents by Size of the Households

Size of household	f	%
1-2	67	19.5
3-5	147	42.7

6-8	72	20.9
9 and above	58	16.9
Total	344	100

Table 4.7 shows that majority, 147 (42.7%) of the households had 3-5 members, followed by 72 (20.9 %) had 6-8 members, next 67 (19.5%) households had 1-2 members while 58 (16.9%) of the households had 9 or more members. A cross-tabulation between size of the household and uptake of health insurance was carried out. The results were presented in table 4.8.

Table 4.8 Influence of Household Size on Uptake of Health Insurance

Uptake of National Health Insurance						
Size of household	With health insurance		Without health insurance		Total	
	f	%	f	%	f	%
1-2	22	6.4	45	13.1	67	19.5
3-5	46	13.4	101	29.4	147	42.7
6-8	23	6.7	49	14.2	72	20.9
9 and above	22	7.0	34	9.9	58	16.9
Total	115	33.5	229	66.64	344	100

Table 4.8 shows that of 115 (33.5) of the respondents with NHIF cover, majority, 46 (13.4%) had a household size of 3-5 members, followed by 23 (6.7 %) had 6-8 members, 22 (6.4%) had 1-2 members and 24 (7.0) had 9 and above members. This implies that the households with fewer members may not have seen the need for insurance cover because they could afford out-of-pocket payments when they visit health facilities. The households with many members may not have had enough income to cater for their daily household consumption and inadequate resources to enable purchase of health insurance cover.

The study was also designed to assess the influence of the number of the respondents' children on uptake of National health Insurance. To this end, the study sought first to

determine the distribution of the number of respondents' children..The results are summarized in table 4.9

Table 4.9 Distribution of number of children

Number of children	f	%
0	54	15.7
1-3	102	29.7
4-6	130	37.8
Above 7	58	16.9
Total	344	100

Table 4.9 shows that majority, 290 (84.3%) of the respondents had children whereas 54 (15.7 %) had no children.. This implies that the households would be expected to require some form of health insurance to cater for the health needs of young children. Cross tabulation of the number of children and uptake of National Health Insurance was done in order to assess the influence on the uptake. The results were presented in table 4.10.

Table 4.10 Influence of number of children on Uptake of National Health Insurance

Number of children	Uptake of National Health Insurance					
	With Health insurance		Without health insurance		Total	
	f	%	f	%	f	%
0	6	1.74	48	14.0	54	15.70
1-3	31	9.0	71	20.64	102	29.70
4-6	67	19.5	63	18.30	130	37.80
7 and Above	11	3.2	47	13.70	58	16.90
Total	115	33.44	229	66.64	344	100

Table 4.10 shows that out of the 115 (33.5%) respondents with NHIF cover, majority, 67 (19.5 %) had 4-6 children, followed by 31(9%) who had 1-3 children, next were 11 (3.2%) with and above children and only 6(1.74%) who had no children. The study concluded that those who had 4-6 children had the highest uptake of NHIF cover.

4.4 Influence of Level of Education on Uptake of National Health Insurance

The second objective of the study was to determine the influence of level of education on uptake of National Health Insurance in the informal sector of Ithanga Division, Murang'a County. First, the study sought to establish the level of education of the respondents by asking them to indicate the highest level of education they had attained. The results are presented in Table 4.11

Table 4.11 Distribution of Respondents by the Level of Education.

Level of Education	f	%
No formal schooling	5	1.5
Primary	250	72.7
Secondary	62	18.1
College	21	6.2
University	6	1.8
Total	344	100

Table 4.11 shows that majority, 250 (72.7%) had attained primary level education, followed by 62 (18.1%) who had secondary level education, 21 (6.2%) who had college education, next were 6 (1.8%) had university education and only 5 (1.5%) had no formal schooling. These findings shows that majority, 339 (98.5%) of the respondents had some formal schooling and therefore would be expected to understand health insurance messages, need for quality healthcare and importance of health insurance cover.

Further, the study then set to determine the influence of level of education on uptake of National Health Insurance in the informal sector of Ithanga Division, Murang'a County. To

this end, a cross tabulation of the respondents' level of education and uptake of National Health Insurance was done. The results are presented in table 4.12

Table 4.12 Influence of Level of Education on the Uptake of National Health Insurance

Level of Education	Uptake of National Health Insurance					
	With health insurance		Without health insurance		Total	
	f	%	f	%	f	%
No formal schooling	2	0.6	3	0.9	5	1.5
Primary	91	26.5	159	46.2	250	72.7
Secondary	14	4.1	48	14.0	62	18.1
College	5	1.5	16	4.7	21	6.2
University	3	0.9	3	0.9	6	1.8
Total	115	33.6	229	66.7	344	100

Table 4.12 shows that out of the 115 respondents with NHIF cover, majority, 91 (26.5%) had primary level education, followed by 14 (4.1%) with secondary education, next were 5 (1.5 %) with college education, 3 (0.9%) with university education and only 2 (0.6 %) with no formal schooling. The data reveals that there are gaps in access to higher education in the region since only 27 of the total of 344 respondents had attained college and university level education. Low educational attainment has negative implications on ability to access quality jobs and higher incomes in future and therefore being able to afford insurance premiums. The study concluded that education had a significant influence on uptake of health insurance

4.5 Influence of economic factors on Uptake of National Health Insurance

The third objective of the study was to assess the influence of economic factors on the uptake of health insurance in the informal sector in Ithanga Division, Murang'a County. In

order to address this objective, the study assessed the respondents’ main economic activities, household incomes, level of premiums, preferred payment period and affiliations to social welfare groups and how the factors influenced enrollment.

4.5.1 Distribution of the Respondents by Main Economic Activity

The study sought the distribution of the respondents by their main economic activity. The results are summarized in table 4.13

Table 4.13 Distribution of Respondents by their Main Economic Activity

Respondents Main Economic Activity	f	%
Salaried employment	23	6.7
Small scale farming	211	61.4
Small scale business	104	30.2
No form of economic activity	6	1.8
Total	344	100

Table 4.13 shows that majority, 211(61.4%) of the respondents engaged in small scale farming activities, followed by 104(30.2%) who engaged in small scale businesses, 23 (6.7%) were in salaried employment while only 6(1.8%) of the respondents had no form of income generating activity. These findings indicate that majority, 338(98.3%) were engaged in productive economic activities and generally reflect a typical rural economy dominated by agriculture and small scale business with few opportunities for salaried employment.

Further, the study sought to determine the influence of the respondents’ main economic activity on the uptake of National Health Insurance. The results are presented in table 4.14.

Table 4.14. Influence of main economic activity on the uptake of National Health Insurance

Economic activity	Health insurance status				Total	
	With health insurance		Without health insurance		f	%
	f	%	f	%		
Salaried employment	15	4.4	8	2.3	23	6.7
Small scale farming	57	16.6	154	44.8	211	61.4
Small Scale business	42	12.2	62	18.0	104	30.2
No form of economic activity	1	0.3	5	1.5	6	1.8
Total	115	33.5	231	66.5	344	100

Table 4.14 shows that among the respondents with NHIF cover, majority, 57 (16.6%) were in small scale farming, followed by 42(12.2%) who were engaged in small scale businesses while only 15(4.4%) who were in salaried employment Among the 6 respondents with no economic activity, only 1(0.3)had taken the NHIF cover.

4.5.2 Distribution of Respondents By Estimated Average household incomes

The study was also interested in establishing the distribution of the respondents by estimated average Household's Income per Month. The findings were presented in table 4.15.

Table 4.15 Distribution by Average Household's Income per Month

Average Household income (ksh) p.m	f	%
Less than 1000	6	1.7
1000-5000	252	73.3
6000-10000	54	15.7

11000-20000	25	7.3
Above 20,000	7	2.0
Total	344	100

Table 4.15 shows that majority, 252 (73.3%) of the respondents had average monthly household income of Kshs 1,000-5,000, followed by 54 (15.7%) who earned an average income of between ksh.6,000-10000p.m, next 25 (7.3%) had an average monthly income of Ksh.11,000-20,000, 7(2%) earned average income of over 20,000 p.m while only 6(1.7%) earned less than ksh 1000 per month. The low incomes clearly reflect fact that this is largely a rural area where majority depend on subsistence farming and small scale business. Majority, 258 (75%) of the respondents live below two dollars per day or Ksh.167 per day. However, it is worth noting that the NHIF premium is Ksh 160 per month. These findings imply that such families may need to forgo their one day meal to pay for the monthly premium.

In order to assess the influence of household incomes on uptake of National Health Insurance in the informal sector in Ithanga Division, cross-tabulation was carried between the respondent's average monthly income and uptake of National Health Insurance. These results are presented in table 4.16.

Table 4.16 Influence of household income on uptake of national health insurance

Average Household income (Ksh) p.m	Health insurance status					
	With health insurance		Without health insurance		Total	
	f	%	f	%	f	%
Less than 1000	0	0	6	1.7	6	1.7
1000-5000	67	19.5	185	53.8	252	73.3
6000-10000	33	9.6	21	6.1	54	15.7
11000-20000	11	3.2	14	4.7	25	7.3
Above 20,000	4	1.2	3	0.9	7	2.1
Total	115	33.5	229	66.5	344	100

Table 4.16 shows that of the 115 (33.5 %) who had the NHIF cover, majority, 67 (19.5%) had a net household income of between ksh1000-5000 p.m., followed by 33 (9.6%) who had a household income of between ksh 6000-10000, next 11(3.2%) had income of between ksh 11000-20000 while only 4(1.2%) had income of above ksh 20000. Worth noting is the finding that none of the respondents who earned less than ksh 1000 had insurance cover.

4.5.3 Affordability of monthly premiums

Enrollment in insurance schemes is accompanied by regular premiums to meet administrative and claims expenses. If the premiums are not affordable, potential members may not enroll. The study was therefore designed to assess the perceptions on affordability of the ksh 160 monthly premiums paid by informal sector contributors. Respondents were asked to indicate whether they could afford the amount. The results are summarized in table 4.17

Table 4.17 Affordability of ksh 160 monthly premium

Affordability of premium	f	%
Yes	86	25
NO	258	75
TOTAL	344	100

Table 4.17 shows that the majority 258(75%) were of the opinion that ksh 160 was not affordable and only 86(25%) felt that it was affordable. This finding has implications on any policy decisions regarding review of monthly contributions. It also reflects the low incomes in the area of study where the majority depend on subsistence farming and small scale business.

4.5.4 Preferred premium payment period

The premium payment period may have implications on the affordability on premiums payable by contributors. The study was therefore interested in establishing the period of

payments preferred by respondents. To this end, respondents, whether registered or not, were requested to select their preferred period. The results are summarized in table 4.18

Table 4.18 Preferred payment period

Preferred period	f	%
Monthly-every month-ksh160	252	73.3
Quarterly-every 3 months-ksh480	47	13.70
Semi-annually-every 6 months-ksh960	40	11.63
Annually-every 12 months-ksh 1920	5	1.45
Total	344	100

Table 4.18 shows that the majority,252(73.3%)preferred paying contributions monthly,47(13.70%)preferred paying quarterly,40(11.63%)preferred paying semi-annually and only 5(1.45%)preferred paying annually. This may be a clear indication of the economic status of the respondents and has implications on affordability of premiums

4.5.5 Membership of Social Welfare Groups

Cooperatives and merry-go-round groups play an important role in mobilizing resources especially in rural areas. The study first sought the distribution of the respondents by their affiliation to these social welfare groups. The results are summarized in table 4.19

Table 4.19 Distribution by Affiliation to Social Welfare Groups

Membership of welfare group	f	%
Yes	210	61
No	134	39
Total	344	100

Table 4.19 shows that the majority,210(61%)were members of cooperatives or merry-go round groups and 134(39%)were not members

To establish the relationship between membership of welfare groups and uptake of health insurance, cross tabulation was carried out. The results are presented in table 4.20

Table 4.20 Influence of Affiliation to Welfare Groups and Uptake of Health Insurance

Member of Welfare group	Health Insurance Status					
	With Health Insurance		Without Health Insurance		Total	
	f	%	f	%	f	%
Yes	101	29.40	109	31.7	210	61
No	14	4.1	120	34.9	134	39
Total	115	33.5	229	66.6	344	100

Table 4.20 shows that 101(29.40%) respondents affiliated to cooperatives and merry-go-round groups ,were enrolled and 109(31.7%) of members of welfare groups were not enrolled. Only 14(4.1%) of those not affiliated to groups had health insurance. Further analysis of the data shows that out of 210 persons who were members of groups ,101(48.1%)

had health insurance and 109(52%)did not have insurance. The study concluded that affiliation to welfare groups had a strong influence on enrollment.

4.6 Influence of the Awareness of NHIF and uptake of National Health Insurance

The fourth objective of the study was to establish the influence of level of awareness on uptake of health insurance in the informal sector in Ithanga Division, Murang'a County. To achieve this, respondents were requested to answer questions related to awareness of NHIF as an institution, sources of information awareness of procedures, premiums and benefits ,attendance of trainings, visits by NHIF staff ,payment of hospital bills and factors for low enrollment.

4.6.1 Awareness of NHIF

The respondents were requested to indicate whether or not they were aware of NHIF. The results are as summarized on table 4.21

Table 4.21 Awareness of NHIF

Awareness of NHIF	f	%
YES	313	91.0
NO	31	9.0
Total	344	100

Table 4.21 shows that majority, 331 (91%) of respondents were aware of NHIF while only 31 (9%) were not aware of NHIF. The study further assessed the influence of awareness of NHIF on uptake the National Health Insurance. Cross tabulation between awareness and uptake of National Health Insurance was done. The results were presented in table 4.22.

Table 4.22 Influence of awareness on uptake of national health insurance

Awareness of NHIF	Health insurance status					
	With health insurance		Without health insurance		Total	
	f	%	f	%	f	%
Aware	115	33.4	198	57.6	313	91.0
Not aware	0	0	31	9.0	31	9.0
Total	115	33.4	229	66.6	344	100

Table 4.22 shows that out of the total of 313 respondents who said that they were aware of NHIF, only 115 (33.4%) had taken the insurance cover while 198 (57.6%) who were also aware of NHIF had not taken the insurance cover. This shows that the 198 respondents were aware of the existence of the fund but may have received incomplete or inaccurate information on NHIF and therefore did not know how to register and remit monthly premiums. The table also shows that all the 31 respondents who were not aware of NHIF had not enrolled.

4.6.2 Source of information on NHIF

The 313 respondents who indicated that they were aware of NHIF were asked to indicate their source of information on NHIF. The results are summarized in table 4.23

Table 4.23 Source of information on NHIF

Source of information on NHIF	f	%
Radio	210	67.1
TV	10	3.2
Newspaper	2	0.64
Employer	5	1.6
Family friends	86	27.5
Total	313	100

Table 4.23 shows that majority of respondents, 210 (67.1%) received information about NHIF from radio, followed by 86 (27.5%) from family friends, 10 (3.2%) from the television, next 5 (1.6%) from employer and only 2 (0.64%) learnt about NHIF from the newspapers. The prevalence of radio as the main source of information compared to television and newspapers may be explained by the low level of incomes in the rural setting where majority may not have access to televisions and newspapers. 86(27.5%) respondents obtained information from family and friends, indicating the important role played by informal communication and social networks .

4.6.3 Awareness of NHIF registration procedures, premiums, payment mechanisms and benefits

High enrollment of people into insurance schemes require that they are aware of how to register ,pay premiums and then access benefits The study was designed to assess the level of awareness of various aspects of NHIF. The respondents were therefore asked to indicate whether they were aware or not aware about various aspects of NHIF registration procedures, premiums and benefits. The results are summarized in Table 4.24.

Table 4.24 Awareness of registration, premiums and benefits

	Statements	Aware		Not aware	
		f	%	f	%
1	All Kenyans over 18 years can join NHIF scheme	131	38.1	213	61.99
2	NHIF covers contributors one spouses and all children under 18years	129	37.5	215	62.5
3	All contributors are issued with	140	40.7	204	59.3

	photo card				
4	One can register at any NHIF office	125	36.3	219	63.7
5	Registration is open to persons over 65 yrs	124	36	220	64
6	Self employed contributors pay 160 per month	140	40.7	204	59.3
7	Contributors are paid through mpesa, NBK, Co-op and National bank	87	25.3	257	74.7
8	Late payment of contributions attract a penalty	131	38.1	213	61.9
9	NHIF card covers admissions in registered hospitals only	94	27.3	250	72.7
10	Family can use card for maximum of 180 days in a year (6months)	99	28.8	245	71.2
11	NHIF does not cover out patient medical care for self employed contributors	97	28.2	247	71.8
12	Contributions are not refundable when one withdraws	82	23.8	262	76.2

Table 4.24 shows that, the level of awareness of registration procedures (statements 1-4), level of premiums, premium payment mechanism (statements 5-8) and benefit packages (statements 9-12) is below 50%. Majority of the respondents indicated that they were not aware of each of the basic statements. Although majority 313(91%) of respondents had indicated that they were aware of NHIF, the results on awareness of specific statements on NHIF clearly show that they had insufficient information on how to register ,how to pay premiums and how they were to benefit if they enrolled.

To encourage potential members to register, it is imperative that they be made aware of the insurance contract they are entering into. From the results of the study, it is clear that there are

major insurance knowledge gaps that should be filled through mass campaigns to educate the respondents on the role of insurance in health financing.

4.6.4 Attendance of training and seminars on NHIF

Trainings and seminars is one way of sensitizing rural communities on the role of health insurance in healthcare financing. It offers potential members a chance to seek clarification on any aspects of the scheme. The respondents were asked to indicate whether they had ever attended any sensitization training or seminars on NHIF. The results are shown on table 4.25

Table 4.25 Attendance of Sensitization Training or seminars on NHIF

Attendance of sensitization training/seminars	f	%
YES	34	9.9
NO	310	90.1
Total	344	100

Table 4.25 show that majority of the respondents, 310 (90.1%) had never attended any sensitization training or seminars on NHIF. This may imply that many people who may have been interested in enrolling have never had an opportunity for accessing detailed information on health financing and health insurance..

4.6.5 Visits by NHIF staff and agents in the community

The respondents were asked to tick whether or not they had been visited by NHIF staff in their community or home for registration. The results are shown in table 4.26

Table 4.26 Visits by NHIF Staff and Agents

Visits by NHIF staff and agents	f	%
YES	33	9.6
NO	311	90.4
Total	344	100

Table 4.26 shows that majority, 311 (90.4 %) of the respondents had not received any visit by the NHIF staff or agents while only 33 (9.6%) had been visited by the NHIF staff and agents

The results show that there is very little personal contact between potential members and NHIF Staff who would be expected to be passing important information on benefits of health insurance to the residents of the region. The implication here is that the fund managers should intensify field visits to rural communities to create more awareness about the fund.

4.6.6 Admission in Hospital in last 5 years

Respondents were asked to indicate whether any family members had been admitted in hospital in the last 5 years and the findings are summarized in table 4.27.

Table 4.27 Admission in hospital in the last 5 years.

Admission in last 5 years	f	%
YES	139	40.4
NO	205	59.6
Total	344	100

Table 4.27 shows that majority, 205(59.6%) of respondents had no member of their household admitted in hospital for the last 5 years while 139 (40.4%) had a member of their household admitted in hospital within the last five years. The result shows that there are medical care needs in the community and potential for enrolment of more members in this region if they were made aware of the benefit packages and the registration procedures..

4. 6.7 Payments of hospital bills

In order to assess the extent of out-of-pocket expenditure and utilization of NHIF in settling hospital bills, the 139 respondents who had members of their households admitted in the last 5 years were asked to indicate how they were able to pay the hospital bills during their admissions and the results are presented in Table 4.28

Table 4.28 Payment of hospital bills

Method of payments	f	%
Used NHIF card	52	37.4
Have other health insurance cover	2	1.42
Used family savings	6	4.32
Borrowed from friends and family	47	33.8
Sold family assets	11	7.9
Harambee	20	14.4
Total	139	100

Table 4.28 shows that majority 52 (37.4 %) of the respondents who had admissions in their households in the last 5 years utilized their NHIF cards during hospitalization,, followed by 47 (33.8 %) who borrowed from family and friends, next 20 (14.4 %) fund raising (Harambee), 11 (7.9%) sold family assets, 6 (4.3 %) used family savings and only 2 (1.4 %) had other type health insurance cover.. The data also shows that majority, 84 (60.43%) of the respondents relied on out of pocket to clear their hospital bills while only 54 (38.85%) had a health insurance cover to pay their bills. The implication here is that out-of-pocket expenditure for healthcare in the area of study is high and there is need for affordable health insurance to reduce this expenditure.

4.7 Factors for Low Enrollment into NHIF

Enrolment into health insurance schemes may be influenced by a variety of factors. The study was therefore designed to capture the views of the respondents on why they had not enrolled in NHIF. The 229 respondents who were not enrolled were given the opportunity to state the reasons for their non-enrollment. The reasons included : lack of money, inadequate health facilities, mistrust of insurance, mistrust of insurance agents, lack of information on insurance ,high insurance premiums, low salaries, lack of NHIF registration centers, distance to registration offices ,no need for insurance and religion. Further analysis of the responses, based on the main themes, showed that 191(83.41%) were related to high premiums and lack of money ,indicating that affordability was a major concern. Lack of information on

how and where to register was cited by 120(52.45%) respondents, suggesting that there are major insurance knowledge gaps in the community about the basic registration and premium payment procedures. This calls for extensive awareness campaigns to educate potential members of the benefits of the scheme and how they would enroll. Negative perception of insurance was also evident in the study with 20(8.73%) of the respondents giving statements to the effect that they did not trust insurance and insurance agents. The negative perceptions were most likely based on negative experiences of the respondents, their friends and family members with NHIF and other forms of insurance. This calls for extensive trust-building measures through better service to contributors and awareness campaigns aimed at convincing current and potential members that they would get the benefits and services promised in the insurance contracts. The lack of NHIF office in the Division and distance to the nearest NHIF offices was cited by 55(24%) of the respondents, indicating that some of the residents would have registered if they had easier access to registration centers. 2(0.9%) respondents indicated that insurance was against their religious faith. Lastly, 6(2.62%) of the respondents indicated that they did not need health insurance.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION

AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study. In addition, discussion, conclusions and recommendations from the findings are presented. Suggestions for further research have also been outlined..

5.2 Summary of the findings

The purpose of the study was to investigate the factors influencing the uptake of National Health Insurance in the informal sector in Ithanga Division, Murang'a County. The study was guided by four objectives. First, the study sought to assess the influence of demographic factors on uptake of health insurance in the informal sector. The study found that enrollment of residents of in Ithanga division is low with majority of respondents, 229 (66.57 %) not enrolled, while only 115 (33.43%) had enrolled with NHIF. This calls for deliberate efforts to enhance uptake of NHIF among the residents. The study further shows that found majority, 65 (18.90 %) of those with health insurance were females while 50 (14.530%) were males. Regarding age, the study established that respondents aged 46 years and above had higher enrollment compared to other age groups. On marital status, it was found that those who were married had a higher enrollment of 79(23%), followed by 19(5.5%)who were single,14(4.07% who were separated and 3(0.9%)who were divorced. Household sizes of 3-5 members had a higher enrollment of 46(13.4%) while those with 7 and above members had the lowest enrollment of 22(7.0%).Regarding the number of children, Households with 4-6 children had the higher enrollment of 67(19.5%) while households with no children had the lowest enrolment of 6(1.74%).

The second objective was to determine the influence of level of education on uptake of health insurance in the informal sector. The study found that out of the 113 respondents with NHIF cover, majority, 86 (25%) had primary level education, followed by 17 (4.9%) with secondary education, next were 5 (1.5 %) with college education, 3 (0.9%) with university education and only 2 (0.6 %) with no formal schooling. The found that to a great extent the level of education influenced NHIF uptake since majority of the respondents of the respondents with secondary, college, and university education had enrolled for the insurance cover. Majority of the respondents with primary education had not taken insurance cover .Out of 260 with primary level education, only 86 (33%) had enrolled with NHIF. The study concluded that level of education has a significant influence on uptake of health insurance in Ithanga division.

The third objective was to assess the influence of economic factors on uptake of health insurance in the informal sector. The study found out that of the 113 (32.9 %) respondents who had the NHIF cover, majority, 67 (19.5%) had a net household income of between 1000-5000 p.m., followed by 33 (9.6%) who had a household net income range of 6000-10000, next 9 (2.6%) had net income of between 11000-20000 while only 4 (1.2 %) had a net income of above 20000. The study found that majority of respondents falling within income range of 1,000-5,000 p.m 185 (73.4%) out of 252 respondents had not taken NHIF cover, majority of respondents 33 (61%) out of 54 households falling within income range of 6,000-10,000 had taken NHIF cover, majority of respondents 16 (64%) out of 25 households within income range of 11,000-20,000 had not taken NHIF cover while of the respondents falling above household net income majority 4 (57.1%) out of 7 had taken insurance cover. These findings show that social-economic status, as reflected in respondents' level of household incomes, and main economic activity influences enrollment.

Further, the study sought to the influence of level of awareness on uptake of health insurance in the informal sector. The study found out that 115 (33.4%) of the respondents who were aware of NHIF had insurance cover, while 198 (57.6%) were aware of NHIF but no cover. This shows that some respondents were aware of the existence of the fund but were not willing to take cover, or had no money to pay the premiums.

Further, the study found that other factors influenced NHIF cover uptake, with majority of the respondents 191(83.41%) who were not enrolled stating that high premiums and lack of money contributed greatly to the low uptake of NHIF, followed by 120 (52.45%) who cited the lack of adequate information on registration procedures and benefits ,55(24%) cited the lack of NHIF office near their area, and 20(8.73%) stated that they did not have trust in insurance and insurance agents,6(2.62%)stated that they did not need insurance and 2(0.9%) were of the opinion that insurance was contrary to their religious beliefs. The findings appear to resonate with Lavanya(2012) in India ,where barriers to enrollment included lack of knowledge of health insurance, lack of reliability and difficulty in approaching insurance agents .The study concluded that there are major gaps on awareness of the registration procedures and benefits of enrolment and this may account for the low enrollment rates in Ithanga division

Regarding hospital admissions and utilization of health insurance, the study established that 139(40.4%)of respondents had admissions of household members in the last five years and 205(59.6%)did not have admissions. However, the study found that only 52(52%) had made use of their NHIF membership cards to clear their hospital bills, with the majority,84(60.43%)resorting to out-of-pocket payments

5.3 Discussion of findings

The study sought to investigate the factors influencing the uptake of national health insurance in Ithanga division, Muranga County. The findings are discussed below based on each of the research questions and objectives.

5.3.1 Demographic Factors

Demographic factors including gender, age, marital status, household size and the number of children in the household were found to have an influence on the enrollment of informal sector workers in NHIF. In respect of gender, the study established that enrollment of females was 65(18.90% compared to males who were enrolled at 50(14.53%).Further analysis of the total enrollment of 115 respondents shows that females constituted a higher enrollment of

65(56.52%) compared to males who constituted only 50(43.48% female) .Higher enrollment of females may be explained by their role ,especially rural communities, as the persons primarily responsible for taking care of the healthcare needs of children. The findings resonate with those of Boating and Awour (2013) who also observed higher insurance renewal rate amount females on Ghana and also attributed this to women role as caregivers for children and sick members in their families. Bendig M. and Arun T.(2011) also noted higher participation of women in Sri-Lanka and attributed this to their participation in micro finance institutions. The findings however differ significantly with Sabine Cerceau (2012) who found higher enrollment of males in Indias RSBY insurance scheme. Enrollment of females in insurance schemes is crucial due to the central role that they play in communities in activities related to reduction of infant mortality, immunization of children, reduction of communicable diseases , access to hospital deliveries and improvement of other health indicators..

Regarding age, the study established that majority of the respondents were in the 46 years and over age bracket had a higher enrolment percentage of 43.75% and among all the four age groups in the study, none had an enrollment rate above 50%. Older respondents are more likely to be married and having children and other dependants who require medical care and therefore more ready to agree to enroll in the insurance scheme that would facilitate access quality healthcare. With increased age, people may be more inclined to take charge of improving the welfare of their family members. Older respondents are also more likely to understand that they are at higher health risks and try to use health insurance to eliminate or minimize the risks. Respondents in the lower age group of 18-25 years had the lowest enrolment of 14(4.1%).The possible reasons for this result is that some of the younger respondents did not have enough incomes or did not have children whose health care needs had to be taken care of. The findings in this study agree with those of Edward (2009)) and Akwasi and Joshua(2013) who found that likelihood of being to insured increased with the age of respondents. The results of this study differ with those of Aboyomi (2012) who found that older farmers in Osun state in Nigeria ,who lacked education and financial backing ,also had lower probability of enrolling in health schemes.

Majority of the respondents 73.8% were married, 18.0% were single, 3.2% were separated and 2.0% were divorced. It was found that the ones who were married had a higher percentage of the ones with health insurance at 23% ,followed by those who were single at 5.5%,separated at 4.07% and lastly the divorced at 0.9%.The married respondents are more likely to be benefiting from combined incomes from the spouses, hence their ability to afford the premiums. They are also more likely to have children who need the health insurance cover to enable them access health care in accredited health facilities. Kirigia *et al* (2005) also reported the positive influence of marital status on health insurance enrollment in South Africa.

The study established that majority 147(42.7%) of the households had 3-5 members in the household. Of the 115 enrolled respondents, majority 46(13.4%) had 3-5 household members, followed by household size of 9 and above with 24(7.0%), next 6-8 household size with 23(6.7%) and lastly, households with 1-2 with 22(6.4%). It is evident from the data that households with the normal average household composed of spouses and a few children were more likely to be enrolled. The possible reason for this is the higher income per head compared to those with higher household members. Households with more than 9 members may not have enough disposable income to pay for health insurance and may pay more attention to covering basic household needs. These findings differ with those of Doyle and Panda(2011)who observed a positive association between household size and the uptake of health insurance. The study finding agrees with that of Fang et al (2012) who found higher enrollment in households with smaller sizes which also had higher disposable incomes. The lower enrolment of larger households implies that more individuals may not be able to access healthcare and may be spending more on out-of pocket payments thus increasing their chances of falling further into poverty.

With regard to the influence of children, the study established that households with 4-6 children the highest enrollment of 67(19.5%), followed by 31(9.0%) for those with 1-3 children, next was 11(3.2%) with 7 and above children and lastly 6(1.74) for households with no children. Further analysis shows that out of the total enrollment of 115, households with 1-3 and 4-6 children had the higher enrollment of 98(85.22%).The higher enrolment for those

with more children may be explained by the need for families to take the responsibility of the healthcare needs of younger members of their households. Households with no children had the lowest enrollment of 6(1.74%), suggesting that they had higher income per head and could therefore afford out-of-pocket payments for healthcare and did not see the need for health insurance. The findings agree with those of Vineta *et al* (2008) who observed a positive relationship between the number of children in a household and the likelihood of enrolling in health insurance schemes.

5.3.2 Level of Education

On the influence of level of education, it was found that a respondent's level of education was significant in influencing their decisions to enroll. Those with primary, secondary, college, universities and no formal schooling had 26.5%, 4.1%, 1.5%, 0.9% and 0.6% level of uptake respectively. This clearly indicated that attainment of some form of formal education has an influence on enrollment. The most likely explanation of this is the ability of literate individuals to understand the health information messages and access to higher income earning opportunities than those who had no formal education. One of the key observations is the low number of respondents in the area who have attained college and university education. Low education attainment has serious implications on the ability of people to access higher incomes and employment that would ideally enable them afford the insurance premiums. Furthermore, persons with low educational attainment may not be in a position to understand the basic health insurance concepts and role of health insurance as a key component of health care financing. The positive effect of the higher education levels on enrollment was also observed by Mhere (2013) in Zimbabwe Akwasi and Joshua (2013) in Ghana, Kirigia *et al* (2005) in South Africa. The findings are contrary to Boaeng and Awunyor-victor (2013) who found that education level had no influence in enrollment in Ghanas national health scheme. However, the finding that majority of respondents in Ithanga had attained at least primary level education indicates that they may be able to understand basic concepts on insurance and if more awareness is created through messages delivered through print and electronic media, some of the residents may enroll.

5.3.3 Economic Factors

The uptake of health insurance among all the income categories varies. Those in small scale farming, small scale business, salaried employment and those with no form of economic activity had uptake of 61.4%, 30.2%, 6.7% and 1.8% respectively. The higher enrollment for those engaged in small scale farming and small scale business suggests that they had higher income earning opportunities and therefore their ability to afford the NHIF monthly premiums. The findings agree with Bendig and Arun(2011)who found that occupations that were related to lower income earning opportunities negatively affected the probability of willingness to enroll in health insurance schemes in Sri lanka.

With regard to household incomes, the study established that majority of respondents 73.3% earned below kshs 5,000/= per month with only 2% earning kshs 20,000/= and above. The study established that those earning Kshs 20,000/= and above had a higher enrollment rate of 57.14% compared to 26.59% for those who were earning below Kshs 5,000. Higher incomes enable families to meet basic household expenses , including food and clothing ,and have some extra disposable income for payment of premiums The findings agree with Ebenezar and Anthony(2014)who found that higher income earners were seven percent more likely to enroll in Ghanas national health insurance fund compared to those with lower incomes.

The study further established that the majority 227(66%) of respondents are affiliated to social welfare groups (co-operative societies and merry-go-round groups) in the community. Their association in these social groups indicates that the residents are interested in improving their social economic status. The study further established that out of the total number of 115 enrolled respondents, 101(87.83%) were affiliated to the social welfare groups. Mirko and Thankom (2011) and Doyle and Panda (2011) also noted that persons who were participating in micro finance schemes and social welfare groups in communities were more likely to be enrolled in health insurance schemes, demonstrating the crucial role played by social welfare groups in resource mobilization and improving the social-economic conditions of their members and their ability to pay insurance premiums. The influence of formal associations was also noted by Oriakhi and Onemolease (2012) in Nigeria, where those who were members of town unions and associations were three times more likely to be

enrolled in community based insurance schemes. It is also possible that the group provide an opportunity for residents to exchange development-related ideas, including ways of improving health conditions and health financing in the community. These findings tend to agree with those of Sarpong et al (2010) and Kirigia *et al* (2005) who found that enrollment into health insurance schemes is generally higher among persons of higher social economic groups. Improving income earning opportunities through improved agricultural practices, business co-operatives and merry-go-round groups may be a better and practical way of improving the socio-economic well being of residents and improve their ability to pay health insurance premiums.

The study also established that only 86(25%) of respondents were of the opinion that the kshs 160 premium paid by self employed monthly is affordable while the majority 258(75%) felt that the amount was not affordable. On their preferred payment period, the majority 252(73.3%) preferred paying monthly,47(13.7%) preferred paying quarterly,40(11.63%) preferred paying semi- annually while only 5(1.45%) preferred paying annually. The preference for paying monthly by the majority 73.3% may be best explained by the low incomes in the area, where the majority 75.5% stated that they earn less than Kshs 5,000 per month. The implication of this finding is that any policy decisions on increase of amount of premiums and payment period should be based on ability to pay. This finding appears to confirm the observations of Gina and Sapna (2008) that in setting premiums and collection systems suited to informal sector workers, it is important to take into account their low and unpredictable incomes. The findings also confirm the observation by Anja et al(2010) that annual payments in insurance schemes is not advisable as those with low and seasonal incomes may find it difficult to afford.

5.3.4 Awareness

The study established that the 91.0% of respondents are aware of NHIF while 9.0% are not aware. However, the level of awareness has not translated into higher enrollment of new members. Out of 313 respondents who stated that they were aware of NHIF, only 32.80% were enrolled. Among the 31 respondents who stated they were not aware of NHIF none was

enrolled. The low awareness of health insurance was demonstrated by the finding that only 99(28.8%) of the 344 respondents could state any of the benefits of a NHIF membership. Concerning source of awareness on NHIF, radio was the main source of information for the majority 210(67.2%) of respondents. Other sources of information were family and friends 86(27.5% , television 10(3.2%) , employers 5(1.6%) and newspapers 2(0.64%) 8.1%. This finding implies that in its awareness campaigns , NHIF should consider using radio as the preferred media as it is evidently the leading source of information in this rural community. A significant finding of the study is the role of informal communication and social networks in sharing information on NHIF, with 86(27.5%) stating that they got information on insurance from family and friends. The low levels of awareness is also attributable to the finding that the majority of respondents 90.1% had not attended any seminars or trainings on NHIF and 90.4% had never been in contact with NHIF staff or agents in their communities. It is evident from the results that the residents of Ithanga have been denied the opportunity for personal contact with the insurance agents who would be expected to offer detailed information on the health insurance product

Regarding the awareness of specific registration procedures, premiums and benefits, it is evident from the analysis (in table 24) of the responses that the level of awareness is very low with all the statements recording an awareness of below 50%. This implies that although respondents have heard about NHIF through various media sources, they did not understand the insurance product well. Poor understanding of the insurance concept is evident in statement number 12 where majority, 262(76%) respondents indicated that they were not aware that insurance premiums are not refundable upon withdrawal from the insurance scheme. It is possible that the respondents were confusing insurance scheme with the normal savings plans

To encourage potential members to enroll, there is need to make people aware of the existence and value of health insurance compared to alternative health financing schemes. These findings on low awareness level of health insurance in the informal sector appear to agree with Jangati(2012) who observed that low enrollment in informal sector was influenced by deficient information, and poor understanding of functioning of insurance schemes .

Owusu et al(2013)also found that in Ghana, knowledge of basic insurance concepts was lacking, and potential clients were unable to answer questions related to insurance products and premium, with insurance knowledge gaps being more evident among women with low education and among rural dwellers. It is very clear from the study that there is need for simple and clear messages on health insurance, delivered using the most used communication media in the rural community.

5.3.5 Uptake and utilization of health insurance

Analysis of data on hospital admissions in the last five years shows that 139(40.4%) had their household members admitted in hospitals. Regarding the modes of payment of their hospital bills, the data shows that only 52(37.4%) used the NHIF card to clear their bills. Only 2(1.44%) had other form of health insurance. The implication of this finding is that the majority, 85(61.2%) were relying on other out-of-pocket methods including sale of family assets, family savings, fundraisings and borrowing. Overreliance on out-of-pocket payments may appear sustainable in the short term, but for poor households with low incomes, sale of household assets may lead to families falling further into a cycle of poverty. Such families may also tend to postpone urgent medical attention, hence the need for an affordable health insurance. The findings are generally in agreement with the observation of Leive and ke xu(2008) that households out-of-pocket healthcare expenditure in Kenya was 44.8% and the households were not protected from health shocks.

5.4 Conclusions

The following conclusions were made based on the study findings discussed above. Firstly, the uptake of health insurance and utilization of NHIF membership cards in settling hospital bills is low compared to health needs of the community, and as a result many people are resorting to out-of-pocket payments and other alternative health financing systems that may lead many in rural communities failing to access to healthcare and falling further into poverty. There is therefore an urgent need to promote viable health financing schemes, including National Health Insurance, to ensure that the healthcare needs of the poor and the

marginalized especially in the rural areas are catered for. Secondly, although there is some awareness of NHIF registration procedures, premium payment mechanisms and the benefit packages, the awareness has not been translated into increased uptake of the health insurance by potential contributors. Majority appear to be aware of NHIF (as an institution), but are not well versed with specific details on registration, payment of premiums and the benefit packages. The findings show that the fund has not been effective in promoting its products and services and therefore needs to review its social marketing strategies. Thirdly, enrollment of informal sector workers into NHIF is to a large extent influenced by the social-economic status of the target populations as reflected in their income earnings, level of education, size of their households, affiliation to welfare groups, marital status and the number of children. This implies that all future policy decisions on design of benefit packages, premiums payable would have to take into account the ability of potential contributors to pay the set premiums. Extensive actuarial studies should therefore be carried out before any review of benefits and annual premiums

5.5 Recommendations

The following recommendations were made, based on the findings of this study:

a) NHIF level

The National Hospital Insurance Fund (NHIF) which has been identified as the institution to be used to implement universal health coverage in Kenya's needs to improve in the following areas: First, there is need to increase the awareness of health insurance level among the rural populations. As established in the study, radio is the most common source of information for rural populations and should therefore be used as the preferred means of informing current and potential members on the benefits of health insurance. Using the vernacular stations would come in handy in delivering simple and clear messages that can be understood by majority of the rural population, irrespective of their education level and their economic status. Secondly the network of offices especially in the rural areas should be increased to enable residents' access vital information, registration and premium payments. It is also important to explore the viability of simple online platforms to enable persons residing in

areas far from NHIF offices register and pay premiums without having to visit NHIF offices. Finally, given that affordability of the premiums has been cited as a major challenge, the institution should consider allowing informal sector workers pay their premiums in small installments rather than insisting monthly, quarterly, semi-annual and annual payments.

b) Government Policy

The National and County governments should consider paying or subsidizing premiums for the very poor, the elderly and the disabled who are often excluded from social security programs. This should be one of the strategies by the national and county governments to reduce poverty and increase access to quality health care. Enrollment of more members to NHIF may not necessarily result to improved access to healthcare for the poor if there are no quality health care facilities available. The National and County Governments should therefore increase the number health facilities and improve the quality of care offered. This would guarantee that all persons who are registered into NHIF and other insurance schemes get value for their premiums

5.6. Suggestions for Further Research

- i) A study on the role of culture and religion in influencing attitude and perceptions to risk and health insurance
- ii) A study to determine the extent of adverse selection in enrolment. This would address concerns on registration of persons who enroll after falling sick, which may negatively affect the claims payout ratios and sustainability of the insurance scheme.
- iii) A study on the retention and drop-out of the registered members: to find out the reasons why some informal sector workers register and later withdraw from the insurance scheme. Understanding the reasons for dropouts would be useful in review of registration procedures, pricing mechanisms, benefit packages and improving service delivery to contributors.

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APPENDICES

Appendix I: Household Head Questionnaire (HHQ)

The purpose of the study is to assess the factors that influence uptake of National Health Insurance in the informal sector: A case of Ithanga Division in Murang'a County, Kenya. Kindly fill the questionnaire as honestly as possible. The information you provide will be used purely for academic purposes and the recommendations made will be of great importance to our country. The information you provide will be treated with utmost confidentiality.

Section A : Demographic Factors

Instructions: TICK (✓) appropriately.

1. Gender. Male [] Female []

2. What is your age?

18-25 years [] 26-35 years []

36-45years [] 46 years and above []

3. What is your marital status?

Married [] Separated []

Single [] Divorced []

4 (a) what is the size of your household ?

1-2 [] 6-8 []

3-5 [] 9 and above []

(b) How many children(below 18 years) live in your household?:

1-3 [] 7 and above []

4-6 [] No children []

Section B: Level of education

1 What is the your highest level of education?

Primary [] Secondary []

College [] University []

Section c: Economic factors

5) What is your main economic activity?

Salaried employment [] small scale Farming []

Small scale Business [] Others (specify).....

2. Approximately how much is the total house hold income per month ?

Below shillings 5000 []

ksh 6000 -10,000 []

ksh 11,00-20, 000 []

ksh Above 20,000 []

3. Are you a member of a social welfare group?(cooperative or merry-go-round)

Yes [] No []

4 Can you afford to pay ksh 160 per month for NHIF premium?

YES[] NO[]

Section d: level of awareness of health insurance

1. Are you aware of NHIF?

Yes [] No []

2 What is the source of your information on NHIF?

Radio [] T.V []

Newspaper [] Employer []

Family/friends [] Others (specify).....

3. a) Are you enrolled in NHIF?

Yes [] No []

b) If yes, What are the benefits of NHIF?

i.

ii.

iii.

c). If you are not enrolled in NHIF, state the reasons behind this.

i.

ii.

iii.

5). The following are statements about your NHIF. Please tick (✓) whether you are aware or not aware against each.

	Statement	Aware	Not aware
	Awareness of registration procedures		
1	All Kenyans over 18 years can join NHIF schemes		
2	NHIF card covers one contributor, one spouse and all children under 18 years		
3	All NHIF contributors are issued with a photo card after submitting passport		
4	One can register at any NHIF office		
5	Registration is open to people of all ages		
	Awareness of premiums and payment mechanism		
6	Self employed contributors pay Ksh 160 per month		
7	Contributors are paid through M-Pesa or through KCB , Co-op Bank or National Bank		
8	Late payment of monthly contributions attract a penalty		
	Awareness of NHF benefits		
9	NHIF Card covers admissions in registered hospitals only		
10	Family can use the card for maximum of 180 days in a year(6 months		
11	NHIF does not cover out-patients medical care for self-employed contributors		
12	Contributions are not refundable when one withdraws from scheme		

6). (a) Have you ever attended a sensitization /training/seminars on NHIF?

Yes [] No []

(b) Have you ever been visited by NHIF staff and agents for registration at your home or community?

Yes [] No []

SECTION E: uptake and utilization of health insurance:

1: (a) Has any member of your family been admitted in hospital in the last 5 years?

Yes [] No []

(b) How did you pay the hospital bill?

- Used NHIF card []
- Used other type of Health Insurance []
- Used family savings []
- Borrowed from friends and family []
- Sold family assets []
- Harambees []

others

(specify).....

Thank you for your patience and cooperation

Appendix II Krejcie and Morgan (1970) for determining the sample size of a population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size "S" is sample size.

Krejcie, R. V., Morgan, D. W. (1970). *Determining Sample Size for Research Activities, Educational and Psychological Measurement*

APPENDIX III

Household Head Consent Form

I willingly give my informed consent to take part in the research study indicated below:

Topic: Factors influencing uptake of National Health Insurance in the Informal sector in Ithanga Division in Murang'a County, Kenya

By: Timothy Theuri Ndung'u
REG NO. L50/73270/2012
Thika Extra Mural Centre, University of Nairobi

Taking part in this study is on voluntary basis and it is taken as noble undertaking which will lead to generating of information and yield knowledge in the health insurance sub-sector.

Participant's Signature: Date:

APPENDIX IV

Letter of Transmittal

TIMOTHY THEURI NDUNG’U

P.O BOX PRIVATE BAG

THIKA

DATE:.....

Dear respondent,

REF: REQUEST FOR RESEARCH DATA

I am a post graduate student at the University of Nairobi, pursuing MA degree in Project Planning and Management. As part of the course requirement, I’m conducting a study on the factors influencing uptake of National Health Insurance in the informal sector: A case of Ithanga Division in Murang’a County. The study findings will be useful in enhancing the uptake of health insurance in the informal sector. I kindly request you to fill the attached questionnaire to generate data required for this study.

The information you provide will be held confidential and will be used purely for academic purposes. Thank you in advance.

Yours sincerely,

Timothy Theuri Ndung’u

REG NO. L50/73270/2012

University of Nairobi

APPENDIX V



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:

28th January, 2015

NACOSTI/P/15/3785/4653

Timothy Theuri Ndungu
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Factors influencing uptake of National Health Insurance in the Informal Sector: A case of Ithanga Division in Murang'a County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Murang'a County** for a period ending **31st March, 2015.**

You are advised to report **the County Commissioner and the County Director of Education, Murang'a County** before embarking on the research project.

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


DR. S. K. LANGAT, OGW
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Murang'a County.

The County Director of Education
Murang'a County.

APPENDIX VI

THIS IS TO CERTIFY THAT:
MR. TIMOTHY THEURI NDUNGU
of UNIVERSITY OF NAIROBI, 0-1000
THIKA, has been permitted to conduct
research in Muranga County


on the topic: FACTORS INFLUENCING
UPTAKE OF NATIONAL HEALTH
INSURANCE IN THE INFORMAL SECTOR:
A CASE OF ITHANGA DIVISION IN
MURANGA COUNTY, KENYA

for the period ending:
31st March, 2015

[Signature]
Applicant's
Signature


[Signature]
Secretary
National Commission for Science,
Technology & Innovation


Permit No : NACOSTI/P/15/3785/4653
Date Of Issue : 28th January, 2015
Fee Received :Ksh 1,000



CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**


REPUBLIC OF KENYA


National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A 4097

CONDITIONS: see back page