DETERMINANTS OF ENROLMENT IN NATIONAL HOSPITAL INSURANCE FUND AMONG THE COMMUNITY MEMBERS IN UASIN GISHU COUNTY, KENYA

BY

EMMA PHYLLIS WANJIRU (BSc.EVH)

Q57/27353/2014

DEPARTMENT OF COMMUNITY HEALTH AND EPIDEMIOLOGY

"A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH (MONITORING AND EVALUATION) IN THE SCHOOL OF PUBLIC HEALTH AND APPLIED HUMAN SCIENCES, KENYATTA UNIVERSITY"

MAY, 2022

DECLARATION

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

Signature…….. Date……..
Emma Phyllis Wanjiru
Q57/27353/2014

Supervisors:

This thesis has been submitted for review with our approval as University Supervisors.

Signature…….. Date……
Dr. Justus O.S. Osero
Department of Community Health and Epidemiology

Signature…… Date……..
Dr. Mary Muiruri
Department of Community Health and Epidemiology

TABLE OF CONTENTS

DECLARATION……...……ii
TABLE OF CONTENTS iii
LIST OF FIGURES vi
LIST OF TABLES vii
DEDICATION viii
ACKNOWLEDGEMENT ix
ABBREVIATIONS AND ACRONYMS x
OPERATIONAL DEFINITION OF TERMS xii
ABSTRACT xiv
CHAPTER ONE: INTRODUCTION 1
1.1 Background 1
1.2 Problem Statement 4
1.3 Justification 5
1.4 Research questions and hypotheses 5
1.4.1 Research questions 6
1.4.2 Null Hypothesis 6
1.5 Objectives 6
1.5.1 Main objective 6
1.5.2 Specific objectives 6
1.6 Significance of the study 7
1.7 Delimitation and Limitation 8
1.8 Conceptual Framework 8
CHAPTER TWO: LITERATURE REVIEW 12
2.1 Introduction 12
2.2 Extent of NHIF enrolment 12
2.3 Socio-economic factors associated with enrolment 15
2.4 Perception of accountability in NHIF 19
2.5 Perception of quality of health care influence on enrolment in NHIF 20
2.6 Theoretical framework 21

2.7 Summary of literature review and the research gap 22
CHAPTER THREE: MATERIALS AND METHODS 25
3.1 Introduction 25
3.2 Research Design 25
3.3 Variables 25
3.3.1 Dependent variable 25
3.3.2 Independent variables 25
3.4 Location of the Study 27
3.5 Study population 28
3.6 Sampling technique 29
3.6.1 Inclusion criteria 31
3.6.2 Exclusion criteria 31
3.7 Sample size determination 32
3.8 Construction of Research Instruments 32
3.9 Pre-testing 33
3.10 Validity 33
3.11 Reliability 33
3.12 Data collection techniques 34
3.12.1 Quantitative data collection 34
3.12.2 Qualitative data collection 34
3.13 Data analysis 35
3.14 Ethical considerations 35
CHAPTER FOUR: RESULTS 37
4.1 Introduction 37
4.2 Socio-demographic characteristics of the respondents 37
4.3 Extent of current NHIF enrolment among community members in Kapsaos ward 38
4.4 Socio-economic factors associated with enrolment in NHIF 41
4.5 Perception of Accountability in NHIF 44
4.6 Perception of quality in accredited facilities and NHIF enrolment 46
4.7 Logistic regression of factors associated with enrolment in NHIF 49

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS 52
5.1 Discussion 52
5.1.1 Extent of NHIF enrolment among community members in Kapsaos ward 52
5.1.2 Socio- economic factors that influence enrolment in NHIF 53
5.1.3 Perception of accountability in NHIF scheme and its influence on enrolment 56
5.1.4 Perception of quality of health care influence on NHIF enrolment 57
5.2 Conclusion 60
5.3 Recommendations 61
5.3.1 Recommendations from the study 61
5.3.2 Recommendations for further research 62
REFERENCES 63
APPENDICES 69
Appendix I: Questionnaire 69
Appendix II: Interview Guide 78
Appendix III: Informed Consent Form 81
Appendix IV: Kenyatta University Graduate School 83
Appendix V: Ethics Review Approval 84
Appendix VI: Permit from the County of Uasin Gishu 86
Appendix VII: NACOSTI Approval 87
Appendix VIII: Map of study area 88

LIST OF FIGURES

Figure 1.1 Conceptual framework for factors that affected enrolment in NHIF 11

Figure 4.1 Proportion of respondents enrolled in NHIF……..….....40

Figure 4.2 Perception of quality of care in accredited facilities 48

LIST OF TABLES

Table 3.1 Distribution of Study Sample 31

Table 4.1 Socio-demographic characteristics of respondents..... 38

Table 4.2 Relationship between socio-demographic characteristics and NHIF enrolment.... 41

Table 4.3 Economic characteristics of respondents Kapsaos ward 42

Table 4.4 Relationship between Household Economic Characteristics and NHIF enrolment 43

Table 4.5 Perception of accountability of NHIF scheme and enrolment..... 44

Table 4.6 Relationship between perception of accountability of NHIF and enrolment 45

Table 4.7 Respondents' perception of quality of care in accredited facilities..... 47

Table 4.8 Relationship between perception of quality of care in accredited facilities and NHIF enrolment 49

Table 4.9 Logistic regression of factors associated with enrolment in NHIF 51

DEDICATION

To my mother Lucy, and sister Njeri who have been my support all through.

ACKNOWLEDGEMENT

I am very grateful first to God for granting me good health to do the research. I am also very grateful to my supervisors for their time all through and guidance in my work and the tireless efforts. I pray that God blesses them in all their endeavours. I also thank the Department of Community Health and Epidemiology for their support and guidance while working on the thesis. I also appreciate my sister and my mother who prayed and supported me through the course. Lastly, I acknowledge the Uasin Gishu County staff who enabled me to carry out this research, my research assistant and the respondents for their cooperation.

ABBREVIATIONS AND ACRONYMS

CBHI	Community Based Health Insurance
CI	Confidence Interval
GDP	Gross Domestic Product
KDHS	Kenya Demographic Health Survey
KHHEUS	Kenya Household Health Expenditure and Utilization Survey
KIHBS	Kenya Integrated Household Budget Survey
KNBS	Kenya National Bureau of Statistics
MoH	Ministry of Health
NACOSTI	National Commission for Science, Technology and Innovation
NHA	National Health Accounts
NHIF	National Hospital Insurance Fund
OR	Odds Ratio
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Sciences
Std Err	Standard Error
THE	Total Health Expenditure

UHC	Universal Health Coverage
UNGA	United Nations General Assembly
USSD	Unstructured Supplementary Service Data
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Accountability in NHIF – refers to the extent to which NHIF is responsible and transparent in their mandate in use of financial resources, compliance in meeting legal obligations and efficiency of operations.

Catastrophic health expenditure: This is health expenditure that is 10% of total income for a household or 40% of all non-food expenditure. It is high financial costs from the household income used on health care that exceed a certain threshold which may lead households to poverty.

Dependent variable: this is the variable being assessed whose value will change depending on the value of another variable called the independent variable.

Enrolment: Enrol means to sign up for or to register. Enrolment is therefore being signed into or registered. It was used in this study to refer to members registration to National Hospital Insurance Fund.

Independent variable: This is the variable that the researcher measures or manipulates that has an effect on the dependent variable.

Informal sector: The informal sector refers to workers who are self-employed and who work for people who are self-employed, they are not on payrolls thus they are not taxed. In Kenya it includes the *jua-kali* sector, transport, and manufacturing and construction services and forms the larger proportion of the population in Kenya.

Non-public facilities: This refers to health facilities owned by mission hospitals; non-governmental organizations and private health facilities. The facilities not owned by the government. It refers to facilities outside of the public health facilities.

Universal Health Coverage: It aims to have all segments of the population being able to have access to healthcare freely without suffering financial catastrophe. It is having the independence to seek healthcare for all regardless of costs due to various approaches and strategies including prepayment and pooling as well as tax-based systems to finance health care.

ABSTRACT

In Kenya around a million people are pushed to poverty annually paying for healthcare out of pocket. Prepayment and risk pooling has been used to avoid the risk of paying for healthcare from household income at time of illness. Universal health coverage is part of the four main government agenda from 2018-2022 which targets to have 100% enrollment in NHIF. Despite increased NHIF benefits in 2015, enrolment in Uasin Gishu remains low at 16.6% compared to the national average at 19%. The low enrolment in health insurance causes people to pay for healthcare out-of-pocket which is a deterrent to seeking health care. This study aimed to establish the determinants of enrolment in National Hospital Insurance Fund among the community members in Uasin Gishu County, Kenya. It assessed the socio-economic factors, perception of accountability and the influence of the perceived quality of care in accredited health facilities. A cross-sectional study design was used. The county and the ward were selected purposively for the research. The county represented the majority of the Kenyan economic engagement and Kapsaos ward had a majority, (26%) of hospital bills waived in Uasin Gishu county. The number of households per village was determined proportional to size of village and simple random sampling was used to sample the households to interview. A sample of 334 households was interviewed (N=334). Data was collected using structured questionnaires which were administered by the researcher. The researcher also interviewed 11 key informants. Pretesting was done in Kapsoya to ensure validity. Data was analyzed using SPSS version 20 and Pearson's Chi-square test was done with corresponding 95% confidence interval to establish association between the dependent and independent variables. The level of statistical significance was at p-value <0.05. Logistic regression was done for factors that were significantly associated with enrolment in NHIF. The findings of the study revealed that enrolment into NHIF in the area was at 35%. The factors that influenced enrolment were having secondary education [OR 3.862, CI = 1.347; 11.074; std. Err. 0.537; p=0.012], being in the professional and technical occupation [OR 1.978; CI = 0.679, 5.766; std. Err. = 0.546; p=0.011], income of Ksh. 16,000-20,000 [OR =2.652 CI=0.716, 9.831; std Err. = 0.668; p= 0.044], preference for private health facilities, [OR=8.006 CI=2.39, 26.820; std Err. = 0.617; p=0.001] or public health facilities [OR=4.532 CI=1.518, 13.530; std Err. = 0.558; p=0.007], perception of scheme as being open with information [OR=3.375; CI=1.941, 5.866; std Err. = 0.282; p=0.001] and perceived good quality of care in accredited facilities [OR=1.825; CI=1.053, 3.162; std Err. = 0.280; p=0.032]. The researcher found that the enrolment was 35%, below the set target of 100% by 2022. The researcher concluded that socio-economic factors are associated with enrolment, the perception of accountability of NHIF scheme influences enrolment while perception of quality of care influences enrolment with those who perceived quality to be good enrolling more. The researcher recommend that the county government should step up awareness to increase enrolment, the government should come up with strategies to improve income and increase education including implementing policy on basic education and minimum wage and also the health insurance subsidy programs, the NHIF needs to be open with information which the public needs on use of resources and the services covered, county government should ensure good quality of healthcare is maintained in health facilities through regular quality assessments.

CHAPTER ONE: INTRODUCTION

1.1 Background

Globally, 1.3 billion people live on less than a dollar a day and they lack access to health care, as they cannot afford to pay when in need of services. The WHO recorded that about 150 million people globally suffer financial catastrophe while 100 million are pushed below the poverty line each year from paying for health care (WHO, 2017a). In Africa, the majority of health systems are reliant on out-of-pocket payments, which is direct means of payment for healthcare. These payments strain household budgets, deter people from accessing health services and pushes households into poverty. The United Nations General Assembly (UNGA) in response to these hardships made a decision to adopt health as one of the sustainable development goals with universal health coverage as one of the targets of the goal to reduce financial barriers to accessing health care (United Nations, 2015).

Universal Health Coverage (UHC) refers to having people in need of health care able to access health services at the time they need them without suffering financial hardship. UHC entails the reliance on prepayment and risk pooling which are sustainable approaches to financing health care (WHO, 2017b). Prepayment refers to servicing premiums to a pool before an illness occurs, while risk pooling refers to collection of the premiums so that the uncertainty of being sick is borne by all members of the pool: the funds are sourced from the pool when need arises and not from household income (Matthaeur *et al.*,2018). The health financing mechanisms where prepayment and pooling are applicable include tax-based financing and health insurance.

The health care system in Kenya is financed through the government which accounts for 33.5% of the Total Health Expenditure (THE), private means account for 39.8% while donors account for 25.6% of total health expenditure (Ministry of Health, 2020). Private spending is mostly in form of direct out-of-pocket payments, which implies that majority of Kenyans are not covered by any form of health insurance. A significant proportion of the population (27%) paid for their health care 'out-of-pocket' that is directly from their income at the time of need (Ministry of Health, 2018). These out-of-pocket payments drive an average of 1 million Kenyans to poverty annually (Ministry of Health, 2018). In 2017, out of the people who reported illness and failed to seek health care, 21.4% failed due to high cost of seeking healthcare (Ministry of Health, 2018). Therefore, for many Kenyans, enrolment into a health insurance scheme would reduce the financial barriers associated with accessing healthcare and pave the way for universal health coverage.

Insurance coverage in Kenya stood at 19% by the year 2018 (KHHUES, 2018). Private insurance was estimated to be about 9.4% of the insured population and these were mostly individuals who self-insured or as employee benefits for corporate organizations (Ministry of Health, 2018). Community Based Health Insurance (CBHI) involves individuals forming *chamas* (community-based organizations) where they contributed money, which would be used to pay for medical bills has had low uptake at about 1.3% and is localized in rural communities (Fadlallah *et al.*, 2018). Public health insurance is provided by NHIF, which covers the majority (88.4%) of the insured population (Ministry of Health, 2018). Uasin Gishu County is one of the 47 counties in Kenya; it is on the highlands and is highly productive with the main economic activity being agriculture. NHIF enrolment in the county stood at an average of 16.6% but there are no clear reasons for the low enrolment

(Ministry of Health, 2018). The study was done in Kapsaos ward which had a majority of waivers indicating the strain to pay for healthcare.

The NHIF was started by an Act of Parliament in 1966 for government employees and amended in 1998 to include all people above 18 years both in the formal and informal sectors. The NHIF mandate was to provide access to quality and affordable healthcare for Kenyans (Barasa *et al.,* 2018). The NHIF though open to enrolment by all, had majority of its members in the formal sector which made approximately 26.3% of the population while the rest made 73.7% of the population and had voluntary enrolment. The government aims to achieve universal health coverage in the government agenda termed as the "big-four agenda" by 2022 (Parliamentary Budget Office, 2018). Formal sector employees contributed 1.5% of their salary up to a maximum of Ksh. 2000 and their employer matched that amount for each employee. The informal sector and the community members contributed Ksh. 500 per month per household and membership lasted as long as they paid the premiums (Ministry of Health, 2018).

The NHIF covered inpatient and outpatient services in public hospitals, and up to a certain capped amount for private facilities, missionary health care facilities, and NGO hospitals (Ministry of Health, 2018). In 2015, the NHIF increased benefits to include medical consultation, lab work, drug administration and dispensing, dental health care, radiology examinations, nursing and midwifery services, surgical services, radiotherapy, and physiotherapy (Barasa *et al.*, 2018b). Growth in the NHIF was expected to come from the community and informal sector, to reach 100% by 2022 (Ministry of Health, 2018). The government aimed to reduce out-of-pocket to 25%, which could be achieved using prepayment and pooling mechanisms to finance health care (Barasa *et al.*, 2018). Against

this background, the study assessed the determinants of enrolment in NHIF among the community members in Uasin Gishu County.

1.2 Problem Statement

In Kenya, access to healthcare was largely influenced by finances, people were hindered from timely access to healthcare due to lack of finances at the time of need which could lead to deterioration of the illness which then required complex treatment and could result to death. Enrolment into NHIF remained low at 19% (Ministry of Health, 2018) yet the government intended to have NHIF enrolment at 100% by 2022 to achieve universal health coverage (World Bank, 2018). Enrolment in NHIF was concentrated in the formal sector where premiums are remitted automatically from salaries, yet enrolment was expected to come from the population that is not covered in the community and those in the informal sector. NHIF has been seen as being insurance for the employed people only and enrolment for the non-formal groups is voluntary and depends on attractiveness of the scheme (Ministry of Health, 2018).

The government made efforts to make the scheme more attractive by increasing NHIF benefits, however, enrolment was still low at 19% as of 2018 falling below the set target of 100% by 2022 (Ministry of Health, 2018; WHO, 2018). The population left out of health insurance was also the population with a large proportion living in poverty and at a greater risk of illness due to their living and working conditions. The Kenya Household Integrated Budget Survey Report indicated disparities between the rural and urban populations in enrolment in NHIF where rural areas had a lower NHIF enrolment at 14% compared to urban areas at 33% (MOH, 2018). In addition to the lower insurance enrolment the rural

populations reported higher expenditure on health care indicating an unmet need for health insurance among the rural areas (World Bank, 2018).

In Uasin Gishu county, enrolment was low at 16.6% compared to the National enrolment of 19% as of 2018 (Ministry of Health, 2018). In 2015, Moi Teaching and Referral Hospital which served the inpatient needs in the county, reported an outstanding bill of Ksh. 350 million (Ministry of Health, 2020) which indicated a strain for the residents to pay for their hospital bills out of pocket. A study done in Uasin Gishu County among rural households that received cash transfer reported that out of 300 households only 16 households (5%) had any form of health insurance (Embleton *et al*., 2014). The findings from that study did not report the factors associated with the low enrolment. This study assessed the factors that determine enrolment into National Hospital Insurance Fund among community members in Uasin Gishu County and gave evidence for addressing the gap.

1.3 Justification

The study was done in Uasin Gishu County to establish the determinants of enrolment in NHIF among community members in the study area. The research was done in the county which represents the economic engagement of the majority of the Kenyan population. NHIF is the social health insurance scheme. The justification for this is that Kenya has an agenda to achieve universal health coverage through NHIF by having all people covered under the NHIF to overcome financial barriers to accessing healthcare and protect households from impoverishment due to catastrophic medical expenses.

1.4 Research questions and hypotheses

1.4.1 Research questions

The research was guided by the following research questions.

(i) What is the extent of NHIF enrolment among community members in Kapsaos ward in Uasin Gishu County?

(ii) What are the socio-economic factors that influence enrolment in NHIF?

(iii) To what extent does perception of accountability of the NHIF scheme influence enrolment in NHIF?

(iv) To what extent does the perception of quality of health care in accredited health facilities influence enrolment into NHIF?

1.4.2 Null Hypothesis

(i) There is no significant relationship between socio-economic factors and enrolment in NHIF.

(ii) Perception of accountability of the NHIF scheme has no influence on NHIF enrolment.

(iii) Perception of quality of healthcare in accredited facilities has no influence on enrolment into NHIF.

1.5 Objectives

1.5.1 Main objective

To establish the determinants of enrolment in National Hospital Insurance Fund among the community members in Uasin Gishu County, Kenya.

1.5.2 Specific objectives

(i) To determine the extent of current NHIF enrolment among community members in Kapsaos ward in Uasin Gishu.

(ii) To identify the socio- economic factors associated with enrolment into NHIF among residents of Kapsaos ward in Uasin Gishu County, Kenya.

(iii) To determine the influence of perception-of-accountability of NHIF scheme on enrolment among residents of Kapsaos ward in Uasin Gishu County, Kenya.

(iv) To determine the influence of perceived quality of healthcare in accredited facilities on enrolment in NHIF among residents of Kapsaos in Uasin Gishu County, Kenya.

1.6 Significance of the study

The study will contribute to scholarly literature on the topic and will be used in referencing. It will provide information to stakeholders on the progress towards universal health coverage and enable informed decisions which will help to make NHIF more attractive. It is also expected to stimulate positive debate about health insurance which will increase knowledge of benefits and possibly influence enrolment. In addition, the findings will form a baseline for evaluation and for policies on universal health coverage.

The findings will also give information which will help in institutionalization of monitoring and evaluation through giving information on suitable indicators from the questions asked, the references in the study will also assist in giving suitable secondary sources for background data when triangulating data for monitoring and evaluation of the scheme as well as data on the trends which can be used for comparisons with later studies. This study will also contribute information on designing and aligning scheme’s monitoring and evaluation frameworks for tracking progress and processes and in reviewing the same and

the information will be used for decision making. The study will give information on gaps on policy implementation for universal health coverage and back findings on progress towards sustainable development targets on universal health coverage.

1.7 Delimitation and Limitation

1.7.1 Delimitations

The aim of the study was to find out socio-economic factors, perception of accountability and perception of quality of health care factors that associated with enrolment. It was delimited geographically to Uasin Gishu County to understand what determines enrolment in NHIF.

1.7.2 Limitations

The limitations to the study were access to the households in the rural villages of the study area because the distance was large. The researcher organized for motorbike to access some areas. There was also language barrier, for language the researcher hired a research assistant with knowledge of the local dialect who translated when needed and had questionnaires written in simple language and translated to Kiswahili to reduce the language barrier.

1.8 Conceptual Framework

A conceptual framework by Panda *et al*. (2013) was adopted to find out the determinants of enrolment in NHIF. The framework was used for low and middle-income countries making it appropriate to assess factors for the low enrolment in NHIF in Kenya. According to the framework, the decision to enroll was influenced by demographic and socio-economic factors and perception of quality of care in accredited facilities. The researcher also assessed the perception of accountability of NHIF and its influence on enrolment.

The researcher considered the demographic factors of the household head, as the household head is the primary decision maker in the household and the potential principal NHIF member (Ministry of Health, 2018). Age can influence enrolment, in terms of risk, the old are more at risk of diseases and thus more likely to enroll due to anticipated costs from healthcare needs (Aregbeshola & Khan, 2018). Studies on the influence of gender on enrolment indicate that male-headed households are perceived to be more financially stable and more likely to enrol than female headed households. However, women are seen to have a positive attitude towards enrolment to health insurance (Aregbeshola & Khan, 2018).

Households with lower incomes strained to meet basic needs and were not ready to have an extra cost in health insurance (Nyaboga, 2019). Ability of households to pay healthcare costs affected decision to enroll in NHIF, households which found it difficult to pay for healthcare when need arose were seen to be more inclined to pool funds in NHIF compared to those who had flexible cash flow (Savitha & Banerjee, 2021). Education influenced type of employment as well as understanding of health insurance and thus affected the decision on enrolment (Mwaura *et al.,* 2021). The type of occupation affects income and affordability of health care, which influenced the decision to enroll (Mwaura *et al.,* 2021; Savitha & Banerjee, 2021).

Individual perception of accountability was assessed, institutions which were deemed accountable encouraged people to join them (Fadlallah, 2018). The quality of care in NHIF accredited facilities was also assessed based on respondents' perceptions. Poor quality services were seen as deterrent because the bad services in a facility could push clients away to other facilities which may not be accredited and if so, then they may not see the need to enroll in NHIF (Suchman *et al*., 2020).

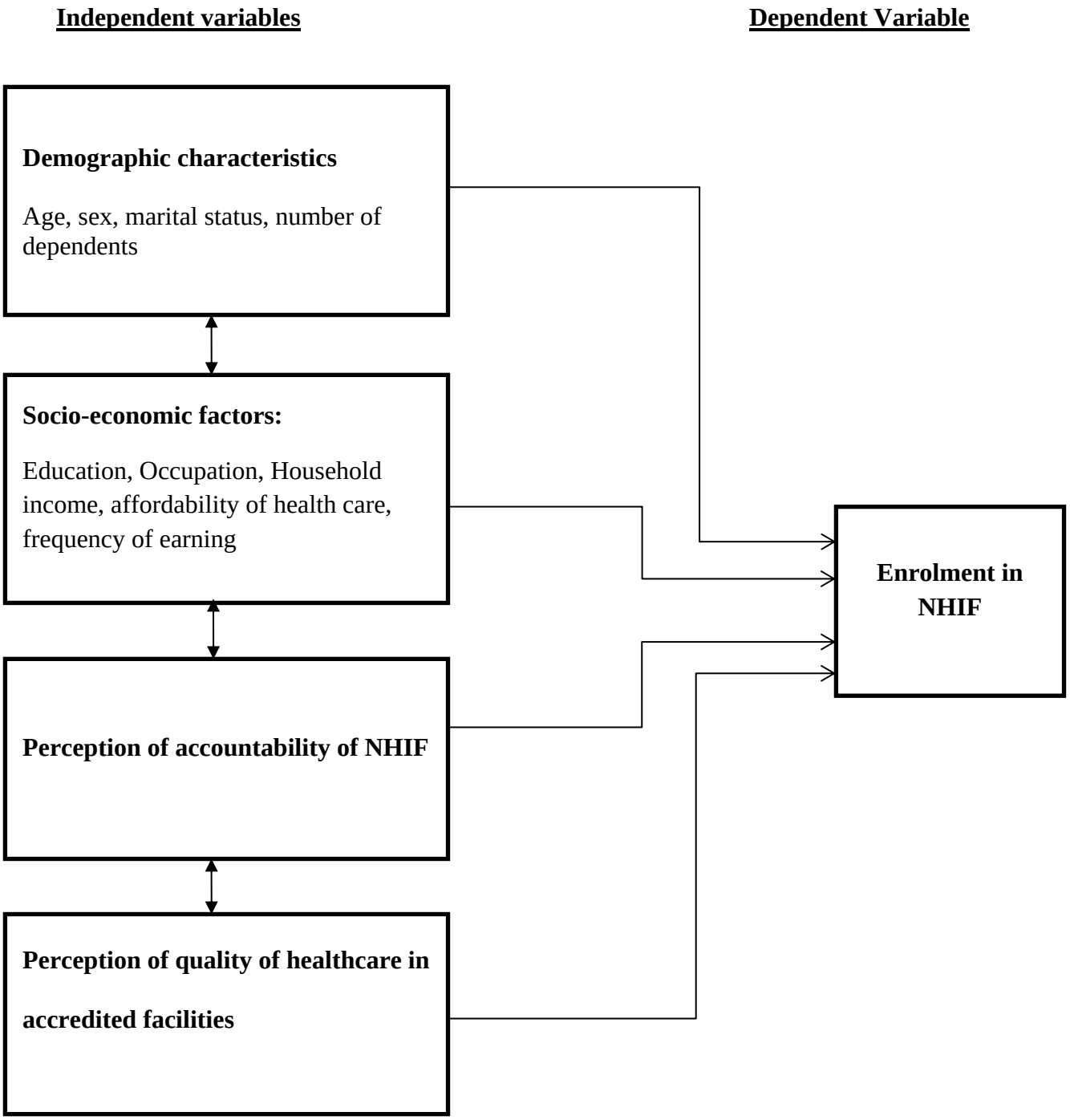


Figure 1.1 Conceptual framework for factors that affected enrolment in NHIF

Source: Adapted from Panda *et al*., (2013)

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical and empirical literature that relates to the study variables that were important in answering the research questions. Theories related to health insurance are included as well as literature around enrolment in NHIF, socio-economic factors which influence decisions on enrolment, perception of accountability of insurance schemes, perception of quality of care and a summary of the gaps identified.

2.2 Extent of NHIF enrolment

The United Nations General Assembly set universal health coverage as one of the targets in achieving the set goal of health in the sustainable development goals. This urged member states to develop prepayment and pooling for sustainable health financing to ensure populations are protected from financial risks associated with paying for health care out-of-pocket (WHO, 2018). Universal Health Coverage refers to populations having access to medical care when needed without suffering risk of financial catastrophe. Universal health coverage will keep households from descending into poverty or resulting to sale of household assets to pay for health services. Ensuring equal access to healthcare for both the poor and the rich alike ensure equity and ultimately healthy people are more productive resulting to greater economic growth (WHO, 2017b).

The WHO conceptualizes universal health coverage as having three dimensions, that is, the 'UHC Cube' according to a report by WHO (2010). The first dimension represents the population covered by health insurance and targets to have the whole population covered for universal health coverage to be achieved. Universal health coverage involves pooling

money together and requires a large population to ensure the risk is shared to a wider pool when a member of the pool is sick. This ensures the risk of illness and subsequent need to pay for health services is not borne by one person or household. Some countries have achieved universal health coverage through compulsory schemes to ensure the whole population takes up insurance. In Thailand, they achieved universal coverage through introduction of a universal coverage scheme and reduction of out-of-pocket payments which reduced incidence of impoverishment to 0.3% against their national average (Tangcharoensathien *et al.*, 2020). Japan, Germany, and France have achieved universal health coverage through compulsory social-health insurance (Tikkanen *et al.*, 2020; WHO, 2018). In Sub-Sahara Africa, poor government policies, and poverty are the major challenges in advancing UHC with 47% population lives below poverty line in Sub-Saharan Africa and have the greatest burden of disease. Rwanda is the only country in Africa which has achieved universal health coverage, it has 90% of its population covered by some form of health insurance while Ghana has 67% of its population covered through a national health insurance scheme (Chemouni, 2018; Wang, 2017). Other African countries like Tanzania and Zambia have low enrolment (Barasa *et al.*,2018). A big proportion has no regular incomes, and some have no means of livelihood making it difficult to include them in mandatory insurance schemes to ensure financial protection (World Bank, 2018b). There is need to extend coverage to ensure that all people do not suffer when in need of health care.

The second dimension of the UHC cube refers to the services covered by the insurance scheme. Everyone needs to have access to prevention, promotion, and rehabilitation services without suffering financial hardships. Prepayment and pooling ensure

sustainability of provision of these services. The WHO aims to have all countries increase the services covered so that the population in need does not suffer when seeking health care.

The third dimension of the 'UHC cube' is on the financial protection. Ensuring that people do not need to pay direct at the time they need help reduces barriers to accessing health services. This aspect considers what people need to pay for out-of-pocket and focuses on reducing user fees. Requiring payments at the point of service delivery which is also referred to as direct payments discourage people from using health services or makes them delay in seeking health services. The direct payments affect the household finances. While user fees cause deterrence to seek medical care, free services on the other hand are not sustainable. Free services have been linked to frequent drug stock-outs, staff overload and generally poor-quality services (Hone *et al.*, 2017). Households that pay more than 40% of their non-food budget to health care suffer financial catastrophe. The measures taken to prevent catastrophic spending are prepayment and pooling mechanisms. Households contribute a specific amount of money regularly to a central place like the insurance scheme or to the government through taxes, which forms pooled funds.

In Kenya NHIF enrolment as of 2018 was at 19% according to the Ministry of Health (2018). There are no recent reports on the current enrolment level since the government put a spirited effort towards increasing enrolment in NHIF as the means to achieve universal health coverage (Ministry of Health, 2018). Enrolment in NHIF is guided by the NHIF policy which outlines eligibility, requirements, and the benefit package. Enrolment is compulsory in the formal sector and voluntary to the rest of the population. Mandatory schemes increase enrolment and allow risk sharing between poor and rich equally (WHO,

2010; Barasa *et al.,* 2018). In Kenya according to the NHIF amendment of 1998, enrolment was for all persons above 18 years of age and who earn Ksh. 1,000 or more per month. However due to the large unregulated informal sector enrolment is voluntary in the informal sector causing overall low enrolment. A study by Kituku and Amata (2016) found enrolment to be low at 33% and noted that scale-up of enrolment towards the set target of 100% by 2022 is slow (Ministry of Health, 2018).

The government of Kenya has set universal health coverage as one of its political agenda in the 5-year term up to 2022 (Parliamentary Budget Office, 2018; WHO, 2018). According to Chemouni (2018), Rwanda managed to achieve UHC by having the political interests shape the design and implementation of a political process in Rwanda, the first country to achieve UHC in Africa, In Kenya the political agenda is set to increase enrolment as the government influences enrolment through awareness creation, the county health subsidy policy for the poor and the aged, and improved services and increased awareness.

2.3 Socio-economic factors associated with enrolment

Demographic factors influence the socio-economic factors and household decisions to enroll in health insurance or not to enroll. Age is a determinant for health insurance enrolment according to a study in Ghana by Wielen *et al*. (2018). The study found out that older people are more likely to enrol and remain in a health insurance scheme due to expected illnesses coming with age. Gender and marital status are all significant determinants of enrolment in health insurance according to a study in Ireland. According to the study being male was associated with having health insurance (Bolhaar *et al*., 2008). A study by Seddoh and Sataru (2018) differed with the findings citing that male are more

risk averse and do not prioritize health insurance while women are more health conscious and plan for their healthcare needs by enrolling in health insurance. The study also attributed higher rates of women enrolling in health insurance due to the increased campaigns and concession given to pregnant women thus increasing women enrolment in health insurance. Marital status was seen as a predictor for enrolment in health insurance according to Savitha and Banerjee (2021).

Education, occupation, and income have been used largely to measure socio-economic status (Savitha & Banerjee, 2021). High levels of education are strongly correlated with good health while low levels of education are a risk factor for many illnesses and higher levels of education were associated with higher likelihood of insurance uptake (Bhusal & Sapkota, 2021). Studies in Ghana found that people with more years of schooling had a higher chance of enrolling in health insurance than those with lesser years of schooling (Kwarteng, 2018; Adewole, 2017). Education is also associated with exposure, information and likelihood of getting employed which influences the decision to enrol in health insurance (Allcock *et al*., 2019; Seddoah and Sataru, 2018; Wolla and Sullivan, 2017). In Kenya people with tertiary level of education had higher enrolment of insurance at 54% compared to those without any education at 9% (Ministry of Health, 2018). People with more years of schooling are likely to secure formal employment yet enrolment of health insurance was generally low across the population, this study seeks to clear the gap on what informs enrolment. There are many children in Kenya who do not complete the basic education course and in response to this, the government put in place policies to ensure all children receive basic education which are being implemented (KNBS, 2019).

The type of occupation influences decision to enrol or not. A study by Bhusal and Sapkota (2021) indicated a significant association between occupation and insurance enrolment. The type of occupation may determine enrolment in health insurance due to the risks involved, and may require the individual to independently enroll or the health insurance is sponsored by the employer (Rabbani and Sarker, 2017). However, in both cases it does not show willingness of people to enroll in health insurance, it shows people's compliance to requirements for employment or opportunity due to employment. Organizations and employers who offer to pay health insurance are more attractive to employees. Studies in Thailand and Rwanda reported that the two countries achieved universal health coverage through stratifying the health insurance according to occupation which is also a predictor of income (Tangcharoensathien *et al*., 2020; Chemouni, 2018). Kenyans in civil service have increased benefits specifically outlined for them but the other sectors have not been accounted for depending on their occupation and needs.

In Kenya enrolment into NHIF is compulsory for those in formal employment and voluntary for the rest who form 75% (Salari, 2018)) of the employed population. These are people engaged in agriculture, casual labourers and small enterprises who make the decision to enrol or not to enrol on their own but who would benefit greatly from health insurance. The occupation also determines the regularity of incomes, like for agriculture which is mainly rain-fed, it is unpredictable and availability of jobs in farms is seasonal which would interrupt the availability of funds to enrol in health insurance. According to a report by World Bank (2018), 57% of the vulnerable populations were reported from households which had agriculture as the main sector of employment.

Income has been seen as a predictor for enrolment in health insurance. Those with regular incomes were more likely to enrol compared to those without regular incomes (Alesane & Anang, 2018). Income which is not regular was also shown to be a deterrent in enrolment into health insurance (O'Brien & Byrne, 2020). Household socio-economic status was found to affect health insurance enrolment in Germany with poor or near poor households lacking health insurance (WHO, 2018). In Ghana however poverty incidence and insurance enrolment did not neatly correlate thus indicating there are other factors outside 'money to pay premium' which influence enrolment (Kotoh *et al.*, 2018). A study in Spain also found the effect of income on health insurance to be non-linear although top 40% of households classified by income had health insurance (Pinilla and Lopez-Valcarcel, 2020).

Households which can afford to pay for healthcare at the time of need without a strain are less likely to join NHIF. A study by Kwarteng *et al.* (2019) gave a different perspective noting that households of higher socio-economic status were more likely to enroll because they did not strain to pay for healthcare. To evade impoverishment for households who may not have flexibility to pay for healthcare when need arises, households may decide to pool funds in health insurance. Elimination of user fees has been employed like in Ghana to ensure households can afford healthcare, however this is not sustainable and has been replaced by health insurance (Kwarteng *et al.,* 2019). According to Kotoh *et al* (2018), some households feel that the cost of health insurance was higher than paying for healthcare themselves thus opt not to pay for health insurance. There are still households which cannot afford to pay for health insurance premiums which live in abject poverty and in constant strain to provide food for the households, the World Bank (2018), recommended subsidization for such households to ensure equity in the scheme.

2.4 Perception of accountability in NHIF

Accountability refers to the extent to which the institution holds itself to account in meeting standards and expectations on the use of financial resources, compliance in obligations, efficiency and effectiveness to achieve results (Posner, 2006). Accountable institutions are transparent in reporting issues and put in place systems to conform to standards. Accountable institutions are trusted and have higher enrolment as people feel that their money is used for the purpose intended, such institutions are open with information (Kaplan & Nussio, 2018). Perception of accountability was measured by assessing respondents' perceptions towards the information received from NHIF, their satisfaction with the NHIF benefits, perception of the premium amount and if what they hear about NHIF accountability would influence their decision to enroll. Reducing financial barriers to accessing healthcare may not ensure universal health coverage alone, the resources availed also need to be handled efficiently and eliminate waste which is an aspect of accountability according to WHO (2010). This means reducing corruption and mismanagement and instead transparency in operations will ensure accountability. A study done in Kenya and Ghana noted that people were hesitant to believe in the system because they do not understand the service package and there was no reference of what to make a co-payment for (Suchman *et al.,* 2020). The study noted that the scheme needs to be acceptable to the people and not doubted. Accountability has been assessed in many CBHI schemes but overlooked for national schemes. In Kenya there have been fraud and mismanagement in the NHIF but there are no studies to show how perception of accountability of the NHIF scheme influences enrolment in NHIF.

NHIF in Kenya requires some co-payments on some of the services that are not fully covered under the scheme, however it is not clear what services require top-up and up to what amount. Openness of the scheme needs to consider even making clear on what needs co-payments as this is an area which can be misinterpreted to be fraud and corruption when beneficiaries are asked for top-up. Munge *et al*. (2019), noted that members were not keen to have co-payments and preferred schemes that are comprehensive, and this led to widespread dropouts and deterrence to enrol.

Institutionalization of monitoring and evaluation systems increases accountability and openness of the institutions and can complement the scheme's reforms towards universal health coverage by giving evidence of the applied approaches to show which one works well, and which aspects need improvement. It can offer a systematic means to track inputs, processes and the results which are required for effective scheme management, and at the same time feedback the findings and information to the stakeholders in the scheme including the contributors who form the majority stakeholders (WHO, 2018). This increases accountability and openness of the scheme. There are structured surveillance systems in Kenya for the health care system by the Kenya National Bureau of Statistics but the NHIF which is a major actor in health care does not do or publish findings.

2.5 Perception of quality of health care influence on enrolment in NHIF

The government is mandated to enforce high quality standards for health services in Kenya according to the Kenya Constitution (Spieker, 2020). The Ministry of Health has approved

standards expected and legal frameworks to support the standards of quality health care but there is still a gap in moving from policy to action through inspections (Ministry of Health, 2018; Marx, 2018). The monitoring and evaluation system are in place but there is a gap in utilization of the data to make decisions or assess improvement in health services. The quality of health care services in NHIF accredited facilities, mostly affects utilization even where healthcare is free (Fenny *et al*., 2018). Patients should be made aware of the kind of services to expect in a certain facility (Spieker, 2020). Quality of services may determine enrolment in that people may not be attracted to seek healthcare if the services are poor and may view health insurance as a waste of money and may opt to pay from their pockets (Laokri *et al*., 2018).

According to KHHEUS survey done in (2018), quality in health care entails availability of drugs, staff attitudes and waiting time. Primary health facilities have frequent cases of drug stock-outs, absence of a qualified physician as well as limited services hindered members from joining the scheme (Macarayan *et al*., 2018). Mbau *et al*. (2020) reported infrastructure in the health facilities, well-equipped hospitals and reliable medicines as aspects of quality-of-care. Fadlallah *et al.,* (2018) noted that cleanliness, lack of drugs, availability of medical facilities and equipment and waiting time were seen to contribute to perceived low quality of care and subsequent low enrolment in health care. They may opt for healthcare services in facilities not accredited by NHIF but where they perceive services as being high quality and staff are responsive to their needs (Mbau et. al., 2020). To achieve universal health coverage and expand the health cover to the whole population, improving the quality of care in health facilities accredited by NHIF needs to be prioritized.

2.6 Theoretical framework

2.6.1 Expected utility theory from a gain perspective

This theory by Nyman (2001) notes that decisions are made under uncertain conditions and its slogan is ‘choose the act with the highest expected utility’. It implies that consumers make the decision to enroll in health insurance based on the anticipated pay-off when they will be ill. The consumers’ expectation when they enrol in health insurance is that the utility gained exceeds the cost in terms of utility foregone when paying for health insurance. An example is that an individual with health insurance who falls sick may have the insurance pay more for them than the premiums paid thus the individual gains compared to an individual without insurance who must pay for medical care without a fall back and any gains made from not paying for health insurance will be likely lost.

2.6.2 Theory of consumer demand for health insurance

The theory by Nyman (2001) holds that people purchase health insurance to obtain additional income when they become ill by having the scheme transfer from the pool to the one in need. This enables people to be covered where they could not afford or to get life-saving assistance. The theory states that consumers prefer the uncertain risk of a large loss and therefore they are not driven to health insurance to avert risks rather to get the gain of being covered in health care and therefore health insurance is presented to be substantially valuable to the consumer. This theory supports implementing a national health insurance and extend health insurance to the uninsured.

2.7 Summary of literature review and the research gap

There are different findings from different places on the effect of socio-economic status on health insurance enrolment in Zimbabwe the poor or near poor households lacked health

insurance while in Ghana insurance enrolment and poverty did not correlate. This study aimed to shed more light on whether there are other factors outside money to pay which influence enrolment.

Concerning occupation, some employers require employees to have health insurance and they therefore enroll to get employment. The study therefore sought to know what propels the decision to enroll whether it is set policy and regulations or attractiveness of the scheme. Employers who offer health insurance are more attractive to employees. This indicates the employee's recognition of the need for health insurance, but it is not clear reasons influencing them to enrol if they do not enrol on their own decisions away from the type of occupation, they engage in. Majority of Kenyans are in the informal sector where enrolment in health insurance is voluntary, some of the occupational engagements are seasonal like those working in the agricultural sector but also there are people with stable occupations, doing well in businesses yet they are not enrolled in NHIF. The study assessed what drives people to enrol or shy away from NHIF.

There were no findings on the perception of accountability on NHIF. Trust has been assessed in many CBHI schemes but overlooked for national schemes. The Ministry of Health and the institutions linked to it carry out regular data collection and feedback to the public on various health aspects but failed to do regular surveys on health sector funding through NHIF which would increase openness of scheme and increase awareness. In quality of healthcare, a mandate of the government, the Ministry has ready standards and legal frameworks in which to work with to enforce quality of health care, but there were gaps in monitoring and evaluation of the health care system. The inspections are done, and data collected, but there was a breakdown is translating the data collected to actionable decisions

to ensure good quality of care. The findings of the study would shed light from the perspective of the user on how the health care system can be enhanced to increase demand for data in decision making to ensure effectiveness in service delivery, equity, efficiency, and continuous improvement of services. Quality of care was reported to affect service utilization especially where the health care workers are not responsive to the needs of the patients (Ngugi *et al*., 2017).

CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

This chapter focused on the research design that was used, how the variables were measured, details of the location of the study and the study population, the sampling technique showing who was to be included in the study and who was to be excluded in the study. It also highlighted the sampling technique and determination of the sample size, construction of research instruments, data collection techniques as well as an overview of data analysis and the ethical considerations during the field study.

3.2 Research Design

A cross sectional study design was used to establish the determinants of enrolment in NHIF among community members in Kapsaos ward. The design was chosen as it is more suitable given the available timeframe and would give a snapshot of the population at the time of the study.

3.3 Variables

3.3.1 Dependent variable

The dependent variable in the study was enrolment into NHIF, which was measured either being enrolled or not enrolled in NHIF.

3.3.2 Independent variables

The independent variables were demographic characteristics of the household head, socio-economic factors, perception of accountability in NHIF, and perception of quality of care in accredited health facilities. Demographic characteristics of the household head were inquired

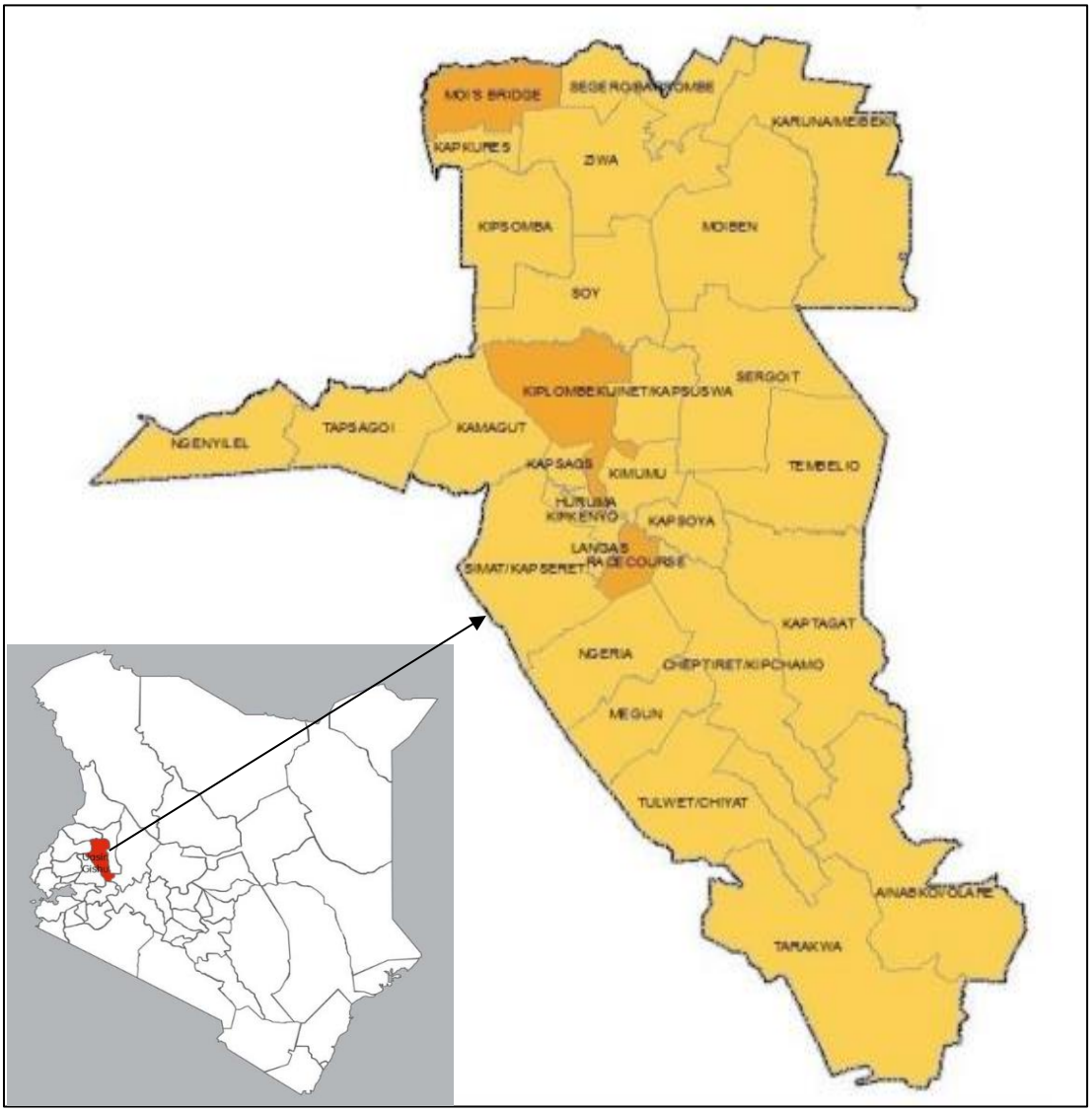
since the household head was the decision-maker in terms of enrolment. These characteristics included age, sex, marital status, and number of dependents.

For the socio-economic factors, the education level and the occupation of the household head were assessed as the household head is the primary decision maker and these factors influence the household's economic status. The household income was also assessed by totaling the contributions of all members in the household who are above 18 years and who were contributing to the household income. Occupation of the household head was categorized into agricultural engagements, unskilled manual, sales and services, and professional or technical work. Household ability to pay for healthcare was assessed for the households which had required healthcare in the 3-months preceding the study; they were asked how they paid for the healthcare and whether they had to sell some household assets to pay for health care.

Respondents' perception of accountability of NHIF was assessed by asking of their perception regarding the premium amount paid to NHIF, their perception of NHIF benefits, they were also asked if they were satisfied with the information, they get from NHIF as well as if what they hear concerning NHIF accountability would influence their decision to enroll or not. For quality of health care in accredited facilities, the respondents rated their perception on a Likert scale with items including medicine availability, information to patients, staff behaviour, services available, hospital infrastructure and waiting time and cleanliness.

3.4 Location of the Study

The study was carried out in Uasin Gishu County. Turbo Sub- County was selected purposively, and the researcher did the study in Kapsaos ward. The study area is located within the GPS coordinates of 0º 38’2.2128” N and 35º 2’ 54.8196” E. Kapsaos ward got a majority (26%) of waiver requests indicating that the residents of the ward strain to pay for healthcare (Hospital Records, 2016). The study area has a rural area which depends on agriculture and peri-urban setting with sales and services businesses being carried out. It covers approximately 20.2km^2.



Adopted from Uasin Gishu County Map (2015).

3.5 Study population

The study population was the household heads in Kapsaos ward. A household was defined as a person or group of persons who lived together in the same house and shared the housekeeping arrangements such as meals. The household head was a member of that

household who bore the economic and social responsibilities for the household. The household head was chosen to be interviewed because he/she is the main decision maker in the household. In the absence of the household head, the spouse was interviewed because they are potential principal member in NHIF or an older representative above 18 years and who agreed to be interviewed.

Key informants are those whose social positions in a research setting give them specialist knowledge about the people, processes, or happenings than ordinary people and therefore a valuable source of information (Payne & Payne, 2004). There were 11 key informants who were selected and interviewed and had to have lived and worked in the area for more than 1 year to have a good understanding of the area. The key informants were 1 county health officer, 1 chief, 2 village elders, 1 NHIF officer, 4 social workers, 2 community health workers.

3.6 Sampling technique

The research was done in Uasin Gishu County. It was selected as it represents the economic engagement of majority of the Kenyan population. The International Labour Organization estimates that 62% (18 million) of the employable population in Kenya earn some form of income from agriculture according to KNBS (2019). Multistage sampling was used in the study. Turbo sub-county was selected purposively because it is the most populous of the 6 sub-counties in Uasin Gishu County with majority of the residents depending on agriculture and Kapsaos ward was purposively selected because a large proportion of waiver requests, were from residents of Kapsaos ward (Hospital records, 2016). The area has a population of around 47,138 people: 22735 female and 24403 male. The households numbered 10,912 in the study area (KNBS, 2010). Kapsaos ward has 2 locations and both were included in

the study. There were 7 villages randomly selected in each of the two locations out of a total of 14 villages in each location. The researcher during the field visit determined the size of the villages from the chief's master list. The villages were the clusters and a sample per village was determined proportional to the population of the village as indicated in the Table 3.1 below. The list of households from the chief was used as the sampling frame, then using a written formula in excel a random sample was determined and then the household's numbers corresponding to the random excel number were highlighted in the chief's household register. The calculation of the random sample ensured no errors in the number count per village. The name of the household head and the contact was picked from the list for all the villages and the household head contacted.

Table 3.1 Distribution of Study Sample

Location	Village name	Households per village	Proportionate Sample
Huruma Location	Rai	294	31
	KPA	236	26
	Sewage	266	28
	Jericho	289	31
	Huruma	311	34
	Dam	262	27
	Kingongo	244	27
Kapsaos Location	Jerusalem	209	22
	St. Jude	118	12
	Tairi mbili	274	29
	Maili nne	279	29
	Mwenderi	223	24
	Road block	241	26
	Sawmill	199	22
	Total sample	**10,912**	**367**

3.6.1 Inclusion criteria

(i) A household head above 18 years who had lived in Kapsaos at least 3 months

(ii) A person who consented to the study by signing the consent form

(iii) Key informants who had lived or worked in Kapsaos ward for at least one year

3.6.2 Exclusion criteria

(i) A household head with mental incapacitation

3.7 Sample size determination

According to the KNBS (2010) the number of households in Kapsaos ward was 10,912. The sample size was calculated using a formula by Fischer *et al*. (1998) for population above 10,000. The p used was 32% from a study in Kakamega which had similar characteristics as the study area. This ensured a large sample which increased precision of results and was more representative of the study population.

$n=Z^2\ pq/d^2$

Where:

n - Desired sample size

Z - Standard normal deviation at 95% level of confidence which is 1.96

p - Proportion of population with desired study characteristic p=0.32 was used because a study by Sunday *et al*., (2015) put NHIF enrolment at community level to be 32%.

q - (1-p) proportion of population without desired characteristic: for this (1-p) =0.68

d - Level of statistical significance (degrees of freedom 0.05)

Hence

$$n = \frac{(1.96)^2 \text{ x } 0.32 \text{ x } 0.68}{0.05^2} = 334$$

10% of the sample was added to account for non-response therefore 367 households sampled.

3.8 Construction of Research Instruments

Data from the households was collected using a questionnaire. The questionnaire was set in English and translated to Kiswahili. The questions were set in simple language, with both open and closed ended questions. The questionnaire used questions which can be used in developing suitable indicators for monitoring and evaluation of NHIF. The questionnaires collected data on demographic characteristics, socio-economic factors, availability and quality of health services and perception of accountability. The Household Health

Expenditure and Utilization Survey and Kenya Demographic and Health Survey were used to construct and standardize questions (Ministry of Health, 2018).

Interview guides were set in English and translated to Kiswahili and used to collect detailed information on accountability information on the health facilities. Key informants were probed on their views on NHIF accountability in NHIF, perception of quality of care, availability of services, and their perception on service- responsiveness to the needs of the people.

3.9 Pre-testing

Pre-testing of the study instruments was done in Kapsoya location in Uasin Gishu which had the same characteristics as the study area. Select household heads were taken through the questionnaire to ensure the instrument measured what it was meant to measure. It ensured that the questions were well understood by the respondents and brought out the intended meaning of the question.

3.10 Validity

Validity is determined by having the research instrument measure what it was intended to measure (Golafshani, 2003). Validity was ensured by pre-testing the questionnaire to ensure face and content validity; this ensured that the responses reflected what was expected of the respondents. The questionnaires were translated to Kiswahili and back-translated to English to ensure the *Swahili* translation did not change the intent of the question. The questionnaires were also cross-checked to affirm that they captured the aims of the study by the research supervisors to ensure validity.

3.11 Reliability

Cronbach's alpha test was also done to ascertain internal consistency of the Likert scales for the quality of care, the likert scale questions. The Cronbach's Alpha coefficient α was 0.73 which is considered acceptable (Cortina, 1993). The researcher ensured that the respondents were selected through random sampling where a random sample was determined and only the households in the sample were interviewed to ensure reliability. The research assistant was trained on the tools and aims of the study and was also supervised closely to ensure reliability. Completeness of questionnaires was assessed in the field and corrections done to ensure reliable results. Reliability refers to the extent to which results are consistent over time and an accurate representation of the total population under study (Joppe, 2000).

3.12 Data collection techniques

3.12.1 Quantitative data collection

The researchers were introduced to participating households using a clearance letter from the County government and were accompanied by the village elders. The interviewees were taken through the informed consent process and confirmed their consent by signing or imprinting with their thumbs. The interview was conducted by the researcher or their trained research assistant at the home of the household head; it took 30 to 40 minutes to complete the interview with one household head.

3.12.2 Qualitative data collection

Qualitative data collection was done by interviewing key informants. The key informants were called days earlier to arrange an appropriate time for them to ensure enough time for the interview. They were taken through the informed consent process by the researcher and

after confirming acceptance by signing the consent document, they were guided through the discussion using the interview guide. The researcher took notes as they interviewed and recorded the interview to ensure everything discussed was captured. The interviews were conducted by the researcher in English or Kiswahili.

3.13 Data analysis

Quantitative data was coded and entered in to SPSS version 20 and analyzed from there. Data was summarized into tables to show descriptive statistics for each variable and presented in charts. Test for association was done using Pearson's Chi-square test and for the variables that were significantly associated with enrolment in NHIF, logistic regression was done to assess determinants to enrolment. The respondents' perception of quality was measured using a 5-point Likert scale and the questions were combined using factor analysis in SPSS to create a quality index which was analyzed using Pearson's chi-square.

The researcher did the transcription using the taped sessions of the interview. Thematic analysis was done by the researcher and involved coding and classifying data. The notes were carefully read and compared with transcribed notes from the tapes and then classified and categorized into themes. The themes were organized together and used to complement the quantitative results.

3.14 Ethical considerations

Kenyatta University graduate school approved the research proposal (Q57/27353/2014, appendix iv). Kenyatta University Ethics Committee gave ethical clearance (PKU871/1935, appendix v). Authority to carry out the research was sought from National Commission for Science, Technology and Innovation (NACOSTI/P/18/94488, appendix

vi). Clearance from Uasin Gishu County was given through a permit to carry out the research and the chief and village elders were engaged (appendix vi). The researcher ensured no names were used in study tools for confidentiality; instead, questionnaires were given unique identification codes. Documents with personal identification information like consent forms were separately stored from study questionnaires. The computer used was secured with password-lock to ensure the information was not accessed by anyone. The sampled participants were explained to the importance of the study and their role in the study and were given time to seek clarifications.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the findings on NHIF enrolment in Kapsaos ward. It comprises of the socio-demographic characteristics of the respondents, the extent of NHIF enrolment in Kapsaos ward, socio-economic factors, perception of accountability as well as perception of quality of healthcare in accredited health facilities.

4.2 Socio-demographic characteristics of the respondents

The researcher managed to reach 334 households which was the minimum sample size and got a response rate of 98% which was acceptable according to recommendations by Mugenda and Mugenda (2003). The high response rate was attributed to the researcher conducting the interview and not dropping and picking. A large proportion (57.1%) was in the age group of 18-35 years. There were slightly more male respondents (53.3%) than female (46.7%). From the findings, majority had secondary education (39.5%) while for marital status, 69.5% were married. Approximately 45.8% of the respondents worked in the agricultural sector while 8.1% reported to be working in sales and services sections which included salons, market and shop businesses as their source of income (Table 4.1).

Table 4.1 Socio-demographic characteristics of respondents

Variable	Categories	Frequency	Percent
Age of respondents (μ =37.3, σ =10.56)	18-35 years	191	57.1
	36-45 years	70	21.0
	46-55 years	53	15.9
	Above 55 years	20	6.0
Gender	Female	156	46.7
	Male	178	53.3
Marital status	Married	232	69.5
	Never married	55	16.5
	Separated	33	9.9
	Widowed	14	4.2
Number of dependents (μ = 2.43; σ =1.59)	Living alone	20	6.0
	1-4 people	280	83.8
	> 4 people	34	10.2
Level of education	No education/incomplete primary	58	17.4
	Completed Primary	56	16.8
	Secondary	132	39.5
	Tertiary	88	26.3
Occupation of respondents	Sales & services	27	8.1
	Professional/technical	66	19.8
	Agriculture	153	45.8
	Unskilled manual	65	19.5
	Others	23	6.9

4.3 Extent of current NHIF enrolment among community members in Kapsaos ward

All the respondents claimed to know NHIF and reported that it is used to pay for healthcare. The results indicated that 35% (116) of the respondents were enrolled in NHIF (Figure 4.1). The researcher inquired on who was the principal member in the household. Out of those who had NHIF, 48.3% (56) were male principal members, while 53.4% (62) were female principal members. The findings indicated that there was 28.1 % (94) who had NHIF and are married, while 41.3% (138) were married and did not have NHIF, further 7.2% (24) who had NHIF were in either never married, separated or widowed according to Table 4.2

below. The researcher also sought to know if they understood the eligibility criteria of NHIF, 97% (323) of the respondents knew that everyone above 18 years is eligible while 3% (11) reported that only those employed by the government were eligible to enroll. Respondents were also asked about the number of people who stay in the household, and whether they were covered by NHIF, 57% (66) reported that they had their spouses and children covered under their NHIF, 8% (9) reported only their children are included while for 35% (41) only the principal member is covered. The respondents who did not have members of their households covered gave their reasons as lack of birth certificates for their children reported by 61% (30), and lack of marriage certificates for spouse reported by 13% (7), while 26% (13) cited own delay in starting the process of registering dependents. The researcher further wanted to know if those not enrolled in NHIF were in another scheme and it found out that only 2% of the people without NHIF opted for alternative health insurance cover. The respondents were also asked if they knew of the government agenda to have all enrolled in NHIF by 2022, 74% (247) reported that they have heard, quoting media, NHIF campaign drives, from politicians and in health facilities while 26% (87) said it was not clear to them.

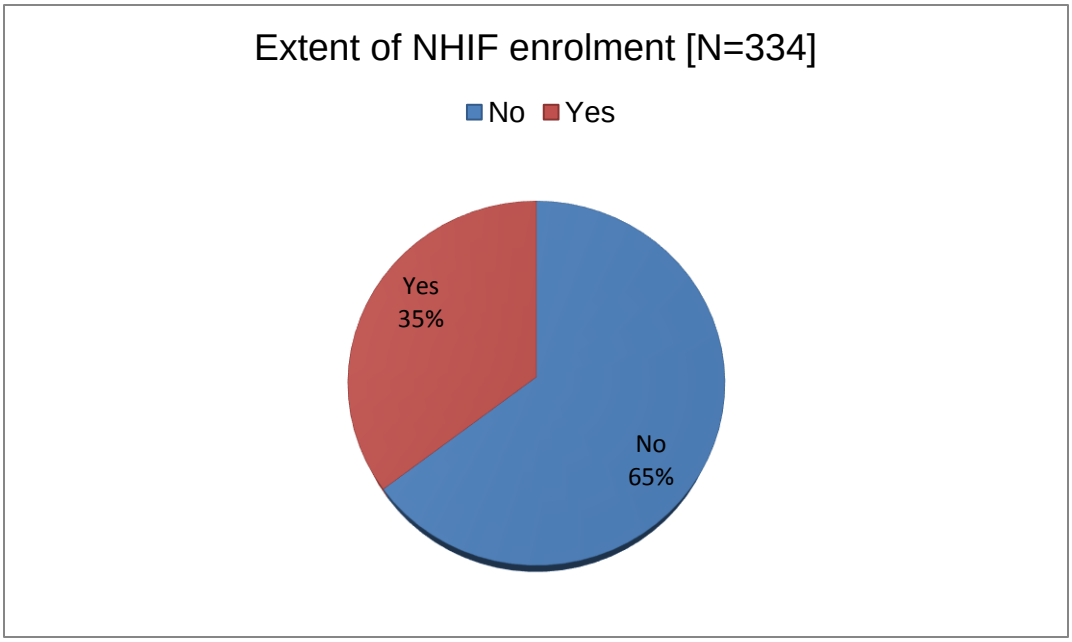


Figure 4. 1 Proportion of respondents enrolled in NHIF

The researcher further sought to find out if the household head's socio-demographic characteristics were associated with enrolment. The researcher did chi-square to test for association between socio-demographic characteristics of respondents and NHIF enrolment. The results indicated that marital status (χ^2= 9.600; df=3; p=0.008) was significantly associated with NHIF enrolment, but age (χ^2=3.412; df=3; p=0.332), gender (χ^2=0.041; df=1; p=0.839) and number of dependents in the household (χ^2=0.14; df=2; p=0.932) were not significantly associated with enrolment as detailed in Table 4.2 below.

Table 4.2 Relationship between socio-demographic characteristics and NHIF enrolment

Variable	NHIF enrolment N=334		$\chi 2$	df	p-value
	Yes n (%)	No n (%)			
Age ((μ=37.3, σ =10.56)					
18-35	64(19.2)	127(38)	3.412	3	0.332
36-45	29(8.7)	41(12.3)			
46-55	20(6.3)	33(9.9)			
>55	5(1.2)	15(4.5)			
Gender					
Female	56(16.7)	100(29.9)	0.041	1	0.839
Male	62(18.6)	116(34.7)			
Marital status					
Married	94 (28.1)	138(41.3)	9.6	3	0.008
Never Married	11(3.3)	44(13.2)			
Separated	6 (1.8)	27 (8.1)			
Widowed	7 (2.1)	7 (2.1)			
Number dependents in the household					
Living alone	7(2.1)	13(3.9)	0.14	2	0.932
1-4 people	98(29.3)	182 (54.5)			
> 4 people	13(3.9)	21(6.3)			

4.4 Socio-economic factors associated with enrolment in NHIF

The factors assessed here were the level of education, the occupation, the total household income, the frequency of earning as well as the source of money to pay for healthcare. The results indicated that majority, 30.2% (101) of the respondents were in the income category of KSH 6,000-10,000 while those who earned KSH 50,000 or above were only 7.5% (25). All the respondents had some form of income but the frequency of earning varied; 52.7% (176) received earnings daily while 43.7% (146) received monthly or weekly earnings. The respondents were asked whether they required healthcare in the 3-months preceding the survey, and how they paid for it. The results indicated that people from 210 households

(63%) had required healthcare 3-months preceding the study, 47% (99) of them were enrolled in NHIF. The respondents who used NHIF to pay for the medical care were 17.1%, (36) while 62.4% (131) reported to have paid for healthcare from household income as reflected in Table 4.3. The other 20.5% (43) paid for health care using other means like borrowed money, selling assets to pay for healthcare and benefiting from waivers. This clearly indicated that very few people utilized NHIF when in need of health care while majority struggled to pay from their own sources.

Table 4.3 Economic characteristics of respondents of Kapsaos ward

Variable	Categories	Frequency	Percent
Total household income (μ =20,012; σ =19,536)	<5000	22	6.6
	6000-10000	101	30.2
	11000-15000	86	25.7
	16000-20000	51	15.3
	21000-50000	49	14.7
	>50000	25	7.5
Frequency of earning	Daily	176	52.7
	Weekly/ Monthly	146	43.7
	Other[1]	12	3.6
Source of money to pay for healthcare	Household income	131	62.4
	NHIF	36	17.1
	Others[2]	43	20.5

[1] Includes those who earn money on an irregular basis
[2] Includes those who sold assets or borrowed money to get cash, got bill waivers

The study did further analysis to establish how the socio-economic factors of the respondents affected their enrolment in NHIF. The results showed that the level of education (χ^2= 12.57; df=3; p=0.006), occupation (χ^2= 25.36; df=4; p=0.001) and household income (χ^2= 12.91; df=5; p=0.024) were significantly associated with NHIF enrolment. However frequency of earning (χ^2= 8.141; df=2; p=0.537), and source of money to pay for healthcare (χ^2=0.009; df=1; p=0.552) were not significantly associated with enrolment (Table 4.4).

Table 4.4 Association between socio-economic factors and NHIF enrolment

Variable	NHIF enrolment N=334		χ^2	*df*	p-value
	Yes n (%)	No n (%)			
Level of education					
No education/ Incomplete Primary	14(4.2)	44(13.2)	12.57	3	0.006
Completed Primary	19(5.7)	37(11.1)			
Secondary	41(12.3)	91(27.2)			
Tertiary	44(13.2)	44(13.2)			
Occupation of respondents					
Sales & services	9(2.7)	18(5.4)	25.364	4	0.001
Profess/Technical	40(12.0)	26(7.8)			
Unskilled manual	15(4.5)	50(15.0)			
Agriculture	49(14.7)	104(31.1)			
Others	5(1.5)	18(5.4)			
Total household income (μ=20,012, σ =19,536)					
<5000	6(1.8)	16(4.8)	12.91	5	0.024
6000-10000	28(8.4)	73(21.9)			
11000-15000	25(7.5)	61(18.3)			
16000-20000	26(7.8)	25(7.5)			
21000-50000	22(6.6)	27(8.1)			
>50000	11(3.3)	14(4.2)			
Frequency of earning					
Daily	51(15.3)	125(37.4)	6.573	2	0.537
Weekly/ Monthly	62(18.6)	84(25.1)			
Others[2]	5(1.5)	7(2.1)			
Source of income for healthcare					
Household income	30(17.2)	101(58.1)	0.009	1	0.552
Others[1]	33(19.0)	10(5.7)			

[1] Includes those who earn money on an irregular basis
[2] Includes those who sold assets or borrowed money to get cash, those who were granted fee waivers

Discussions with key informants indicated that most people got their earning daily, and are not in a position to pay lump sum after every month.

> *"Many people collect their earnings daily, if it was possible to pay for NHIF premiums daily it would encourage more people to join but now they have the fear that they will not be able to be saving their daily earnings to pay NHIF."* KII-2.

4.5 Perception of Accountability in NHIF

The researcher wanted to know the influence of perception of accountability of NHIF scheme on enrolment. The researcher assessed the respondent's perception of NHIF premium and NHIF benefits, they were also asked if what they hear concerning NHIF can influence their decision to enroll and also their perception of the information they get from NHIF. The results are listed in Table 4.5 below.

Table 4. 5 Perception of accountability of NHIF scheme by the respondents

Variable	Categories (N=334)	Frequency	Percent (%)
Perception of NHIF premium	Affordable	76	22.8
	Moderate	107	32.0
	High	151	45.2
Satisfaction with NHIF benefit package	No	50	15.0
	Yes	262	78.4
	Refuse to answer	22	6.6
Would what you hear about NHIF influence your decision on enrolment	Yes	196	58.7
	No	138	41.3
Do you get the information you need?	Yes	146	43.7
	No	188	56.3

The study did further analysis to test for association between the perception of accountability and enrolment in NHIF. The χ^2 test results showed that the respondents' perception on whether they get all the information they need from NHIF is significantly associated with enrolment (χ^2= 6.697; df=1; p=0.001) while respondents' perception of NHIF premium, (χ^2= 1.598; df=2; p=0.450), perception of NHIF benefits (χ^2=10.31; df=1; p=0.284) and if what they hear would influence their decision to enroll (χ^2=1.371; df=1; p=0.848) were not significantly associated with NHIF enrolment, (Table 4.6).

Table 4.6 Association between perception of NHIF accountability enrolment

Variable	**NHIF enrolment N= 334**		**χ2**	**Df**	**p-value**
	Yes n (%)	**No n (%)**			
Perception of premium					
Affordable	30(9.0)	46(13.8)	1.598	2	0.450
Moderate	40(12.0)	67(20.1)			
High	48(14.4)	103(30.8)			
Okey with NHIF benefit package					
No	29 (9.3)	21(6.7)	10.31	1	0.284
Yes	89(28.5)	173(55.4)			
Would what you hear about NHIF influence your decision to enroll?					
Yes	61(18.3)	135(40.4)	1.371	1	0.848
No	49(14.7)	89(26.6)			
Get information needed					
Yes	71(21.3)	75(22.5)	6.697	1	0.001
No	48(14.4)	140(41.9)			

Qualitative results from key informant interviews concurred with the findings.

> *"The premium amount cannot be an issue because when they are sick, they complain that the bill is high, and it is always higher than the premium charged,"* KII-6.

4.6 Perception of quality in accredited facilities and NHIF enrolment

The researcher assessed the respondent's preferred facility for services and also the quality of services at accredited facilities. Quality of healthcare in accredited health facilities was rated on a scale with questions on availability of medicine, waiting time in a hospital, staff behaviour, information available in the hospital, services in the facilities, hospital infrastructure and hygiene in the hospital. All the respondents were aware of the facilities that are NHIF accredited. They rated the quality of healthcare based on their experiences in NHIF accredited health facilities. The respondents were asked to report on their choice of facility for healthcare, 69.5% (232) reported to prefer public health facilities, 18.5% (62) reported that they preferred private facilities while 12% (41) reported they preferred alternative options of care which were pharmacies and self-medication, spiritual remedies and herbal remedies. A quality of care index was developed using factor analysis. From the findings, 52.1% (174) of the respondents reported availability of medicine as being bad and 17.4% (58) were okey with the medicine availability. A big proportion 45.2% (151) of the respondents reported that medical information available is good and excellent while 30% (100) reported that more needs to be done and rated it as bad. On hospital staff behaviour, 41% (137) of the respondents appreciated how they are treated in the health facilities while 37% (122) thought the staff behaviour was bad. Almost half, 44% (148) of the respondents were okey with the infrastructure available, 48% (159) reported that the waiting time is manageable, 22% (74) said the delay in hospitals waiting for services was bad while 17% (58) of the respondents felt it was fair. A half of the respondents reported they are okey

with the services available in the hospital while 28% (95) felt that the hygiene and cleanliness was bad. The results are summarized in Table 4.7 below.

Table 4.7 Respondents' perception of quality of care in accredited facilities

Aspect of quality	Rating	NHIF Enrolled		Total (%)
		No (%)	Yes (%)	
Medicine Available	Excellent	2 (0.6)	11 (3.3)	13 (3.9)
	Good	19 (5.7)	26 (7.8)	45 (13.5)
	Fair	24 (7.2)	10 (3.0)	34 (10.2)
	Bad	119 (35.6)	55(16.5)	174 (52.1)
	Very Bad	52 (15.6)	16 (4.8)	68 (20.4)
Medical Information	Excellent	8 (2.4)	9 (2.7)	17 (5.1)
	Good	75 (22.5)	59 (17.7)	134 (40.1)
	Fair	39 (11.7)	24 (7.2)	63 (18.9)
	Bad	80 (24.0)	20 (6.0)	100 (30.0)
	Very Bad	14 (4.2)	6 (1.8)	20 (6.0)
Staff Behaviour	Excellent	5 (1.5)	1 (0.3)	6 (1.8)
	Good	76 (22.8)	61 (18.3)	137 (41.0)
	Fair	32 (9.6)	19 (5.7)	51 (15.3)
	Bad	92 (27.5)	30 (9.0)	122 (36.5)
	Very Bad	11 (3.3)	7 (2.1)	18 (5.4)
Infrastructure	Excellent	5 (1.5)	8 (2.4)	13 (3.9)
	Good	90 (26.9)	58 (17.4)	148 (44.3)
	Fair	21 (6.3)	10 (3.0)	31 (9.3)
	Bad	91 (27.2)	34 (10.2)	125 (37.4)
	Very Bad	9 (2.7)	8 (2.4)	17 (5.1)
Waiting Time	Excellent	6 (1.8)	8 (2.4)	14 (4.2)
	Good	106 (31.7)	53 (15.9)	159 (47.6)
	Fair	46 (13.8)	12 (3.6)	58 (17.4)
	Bad	33 (9.9)	41 (12.3)	74 (22.2)
	Very Bad	25 (7.5)	4 (1.2)	29 (8.7)
Services Available	Excellent	12 (3.6)	10 (3.0)	22 (6.6)
	Good	93 (27.8)	73 (21.9)	166 (49.7)
	Fair	41 (12.3)	15 (4.5)	56 (16.8)
	Bad	52 (15.6)	15 (4.5)	67 (20.1)
	Very Bad	18 (5.4)	5 (1.5)	23 (6.9)
Hygiene And Cleanliness	Excellent	6 (1.8)	4 (1.2)	10 (3.0)
	Good	79 (23.7)	74 (22.2)	153 (45.8)
	Fair	40 (12.0)	17 (5.1)	57 (17.1)
	Bad	74 (22.2)	21 (6.3)	95 (28.4)
	Very Bad	17 (5.1)	2 (0.6)	19 (5.7)

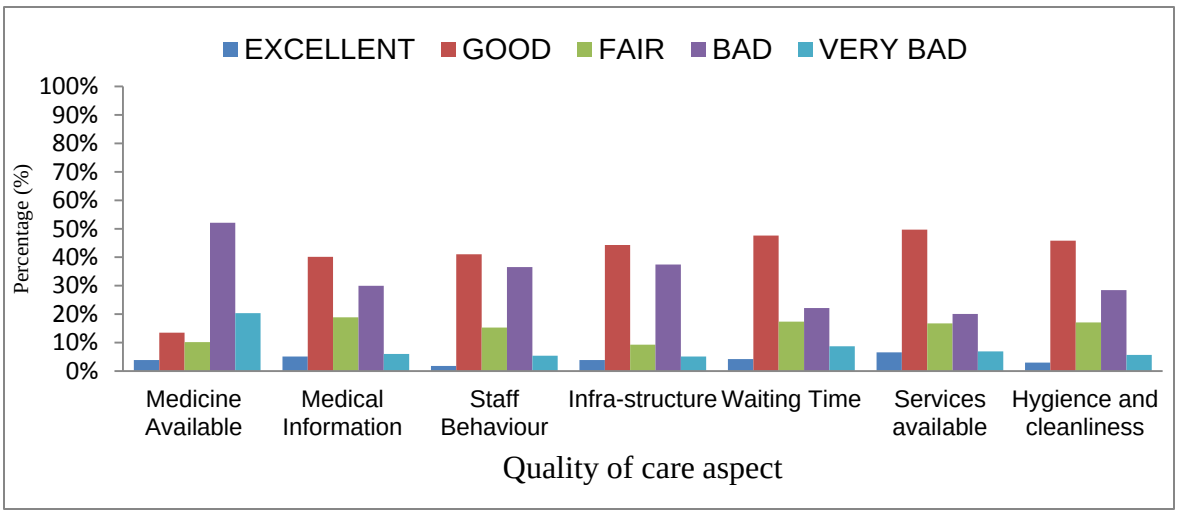


Figure 4. 2 Perception of quality of care in accredited facilities

The researcher analyzed further to establish if choice of facility and quality of care in accredited facilities is associated with enrolment in NHIF. The resulting quality of care index from factor analysis showed that out of those who rated the quality of care overall to be good, 21% (70) were enrolled in NHIF while 27.8% (93) were not enrolled in NHIF, for those who rated the quality of care to be bad, 14.4% (46) were enrolled in NHIF while 36.8% (125) were not enrolled in NHIF. The chi-square test results showed that the respondents' choice of health facility (χ^2= 19.619; df=2; p=0.001) and the quality of care in accredited facilities (χ^2=6.997; df=1; p=0.008) were significantly associated with NHIF enrolment (Table 4.8).

Table 4. 8 Association between quality of care in accredited facilities and NHIF enrolment

Variable	NHIF enrolment N= 334		$\chi 2$	*df*	*p*-value
	Yes n (%)	No n (%)			
Choice of facility					
Public facility	79(23.7)	153(45.8)	19.619	2	0.001
Private facility	34(10.2)	28(8.4)			
Alternative/Informal services[1]	5(1.5)	35(10.5)			
Quality of Care					
Good quality	70(21)	93(27.8)	6.997	1	0.008
Poor quality	46(14.4)	125(36.8)			

[1]Includes pharmacies/drugs shops, traditional healers and use of religious prayers

Qualitative results corroborated the above findings that availability of medicines in accredited facilities which was one of the aspects assessed in quality of care influenced the decision to enrol with NHIF. One key informant mentioned that availability of medicine was one of the determinants of the decision to enroll.

> *"The biggest complain I get when I urge our patients to enroll is that they come to seek healthcare is lack of some medicine and delay in getting treated; they ask why they cannot get all services here."* KII-3.

4.7 Logistic regression of factors associated with enrolment in NHIF

Logistic regression was done for variables that were significantly associated with NHIF enrolment. The likelihood of NHIF enrolment increased with increase in the level of education as those with tertiary education were 3.862 times (OR 3.862, CI = 1.347; 11.074; std. Err. 0.537; *p*=0.012*)* more likely to enrol in NHIF compared to those who had never attended school or did not complete their primary education. Completion of basic primary

course was associated with higher levels of enrolment in NHIF compared with those who had no education or did not complete primary education. Professionals and technical people were close to 2 times more likely (OR 1.978; CI = 0.679, 5.766; std. Err. = 0.546; p=0.011) to enroll in NHIF compared to those who did unskilled manual work. The study also showed that increased incomes were progressively linked to higher likelihood of enrolling in NHIF; people who were in the income category of 16,000-20,000 were 2.652 times more likely to enroll than those with lower incomes (OR =2.652 CI=0.716, 9.831; std Err. = 0.668; p= 0.044). The study found out that people who preferred private facilities were 8 times more likely to enrol in NHIF (OR=8.006 CI=2.39, 26.820; std Err. = 0.617; p=0.001) compared to those who used informal healthcare, while those who preferred public health facilities were 4.5 times more likely to enroll in NHIF (OR=4.532 CI=1.518, 13.530; std Err. = 0.558; p=0.007). Respondents who perceived NHIF to be open with information and they got information from NHIF were more likely to enroll in NHIF than those who felt they do not get all the information. Those who felt they get information were 3.375 times more likely to enrol in NHIF (OR=3.375; CI=1.941, 5.866; std Err. = 0.282; p=0.001) compared to those who thought otherwise. Quality of health services in accredited facilities influences enrolment in NHF: those who perceived the quality of care in NHIF accredited facilities to be good were 1.825 times more likely to enrol in NHIF (OR=1.825; CI=1.053, 3.162; std Err. = 0.280; p=0.032) compared to those who perceived the quality of healthcare in NHIF accredited facilities as poor at shown in Table 4.9 below.

Table 4.9 Logistic regression of factors associated with enrolment in NHIF

Variable	OR (CI)	Std Err	*p*-value
Level of education (ref: not attended/incomplete primary)			
Complete primary education	1.838 (0.740, 4.563)	0.53	0.080
Secondary education	2.529 (0.895, 7.144)	0.464	0.190
Tertiary	3.862 (1.347, 11.074)	0.537	0.012
Occupation (Ref: unskilled manual)			
Sales and services	1.562 (0.429, 5.685)	0.659	0.499
Professional/technical	1.978 (0.679, 5.766)	0.546	0.011
Agriculture	1.263(0.508, 3.138)	0.464	0.615
Others	0.497 (0.113, 2.192)	0.757	0.356
Household income (ref: <5000)			
6000-10000	0.983 (0.279, 3.457)	0.642	0.978
11000-15000	0.843 (0.235, 3.025)	0.652	0.794
16000-20000	2.652 (0.716, 9.831)	0.668	0.044
21000-50000	2.492 (0.663, 9.359)	0.675	0.176
>50000	2.997 (0.685, 13.116)	0.753	0.145
Choice of health facility (ref: alternative options)			
Private facility	8.006 (2.39, 26.820)	0.617	0.001
Public health facility	4.532 (1.518, 13.530)	0.558	0.007
Perceived quality of Health care (ref: poor quality)			
Good quality	1.825 (1.053,3.162)	0.28	0.032
Getting information from the NHIF scheme (ref: no)			
Yes	3.375 (1.941, 5.866)	0.282	0.001

Key informant interview findings largely concurred with the above findings on perception of accountability in NHIF and quality of services in NHIF accredited services.

> *"People think NHIF is for the employed, the county is putting efforts to tell even those in the farms that they should enrol"* KII-7.
>
> *"....NHIF is not responsible for the quality of care and availability of drugs. The drugs supply is the responsibility of the national and county governments."* KII-3.

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Extent of NHIF enrolment among community members in Kapsaos ward

The findings established that 35% of the respondents were enrolled in NHIF, which although positive trend it is still insufficiently accelerated. This is below the target by the government to have 100% enrolled by 2022 (Ministry of Health, 2018; WHO, 2018). The findings show the positive effect of the government strategy to increase health coverage but still indicate that coverage with a view to achieve universal health coverage is still low. The findings were close to findings from a study of a similar population of people by Sunday *et al*. (2015) which reported enrolment of 32%. Another study by Kituku & Amata (2016) reported enrolment at 33%. The findings of this study in Kapsaos ward reported findings close to those of the studies mentioned above. They were done in different locations but to populations with similar socio-economic characteristics. A study by Suchman *et al.,* (2020) listed the factors for low enrolment to be lack of regular income, lack of information on benefits and low education as the major deterrent factors which resulted to low enrolment.

The national average enrolment was 19% (Ministry of Health, 2018). Findings from Kapsaos ward indicate a higher enrolment rate, this resulted from spirited efforts by the government to increase NHIF enrolment with a view of achieving UHC by 2022 in the "big-4 agenda" set by the government to be achieved by 2022 (WHO, 2018). The national government engaged county governments in campaigns to inform people about the need for NHIF, they also used community mobilizers and there was more media coverage of NHIF. This has resulted in increased enrolment across the country, but the poorest in the

country were still lagging in enrolment. Despite the vibrant campaigns, they have not initiated responsive solutions to the low enrolment. The people not covered by health insurance are in greater need of protection against unpredictable financial shocks from health care bills. Financial protection from health care shocks would not be realized unless the scheme was made attractive to the people. Low enrolment hindered access to healthcare for those who relied on out-of-pocket payments and some even stayed back home even when ill because they were not able to access healthcare.

5.1.2 Socio- economic factors that influence enrolment in NHIF

The researcher found that the likelihood of getting enrolled in NHIF increased with a progressive increase in the level of education. Respondents who reported to have a tertiary level of education were close to 4 times likely to enrol and those with secondary education were 2.5 times more likely to enrol compared to those without or with incomplete primary education. Bhusal and Sapkota (2021) found that majority of the respondents who reported to have health insurance had education above secondary level while other studies showed that an increase in education indicated a progressive trend in the likelihood of getting enrolled in health insurance (Seddoh & Sataru, 2018). Education level was associated with increased awareness and the educated were found to be more exposed to information and news on scheme options available and the value of being in the scheme, (Allcock *et al*., 2019; Adewole *et al*., 2017). Higher education levels were also associated with the likelihood of being in formal employment or having more stable businesses with higher incomes (Wolla & Sullivan, 2017). NHIF enrolment was higher among those with high incomes with education being a predictor for income and employment.

To increase NHIF enrolment there was need to increase the level of basic education which in turn would translate to higher chances of employment and higher incomes in both formal employment and self-employment. The government rolled out a policy on compulsory primary and secondary education for all children and a policy on 100% transition to secondary school policy (KNBS, 2019). Compulsory basic education would increase literacy and empower people to make informed decisions. With the implementation of this policy the government would have made a big step towards improving education levels and with sustained improved education, gains would be made in NHIF enrolment. In addition, NHIF would need to do a market survey of the reach of its marketing messages which would help inform their decision of how to reach all cadres of people.

Occupation of the respondents was also found to influence enrolment, the researcher found that people in professional and technical fields were more likely to enrol in NHIF compared to people who worked in unskilled manual labour. Agricultural and sales and services occupations were also slightly more inclined to enrol in health insurance compared to those working in unskilled labour. A study in Bangladesh concurred with this finding where it found that the type of occupation was associated with health insurance enrolment as some occupations mobilized workers to enrol in health insurance (Rabbani & Sarker, 2017). A study by Seddoh and Sataru (2018) found no evidence linking type of occupation with the decision to enrol in health insurance. We have cadres where NHIF premium is charged from the salaries while for those who enrol voluntarily, enrolment is dependent on the attractiveness of NHIF to the client and the ability to pay the premium. The type of occupation influenced the level of income and the frequency of earning; hence it was understandable that those in skilled employment were more likely to enrol in NHIF. In

counties selected to model universal health coverage in Kenya, key government services like business licences and provision of planting seeds, was linked to being enrolled in NHIF which made it easy to track and cause enrolment in NHIF. However, making provision of government services conditional on NHIF enrolment meant that people are shying away from voluntary enrolment.

For people in the agricultural sector there is seasonality of income and fluctuations while some people in other occupations have no security of income, unstable business and sometimes no job at all. Kenya should adopt subsidies for the poor who are not able to pay for NHIF; this model has been implemented in countries which have achieved UHC. Thailand, which achieved 74% universal health coverage in 2002, segmented the health insurance into 3 different schemes with different premium amounts: for civil servants, for the private sector and one for the poor, (Tangcharoensathien *et al*., 2020). In the same way, Rwanda, which is the most progressed country in Africa in its course to achieve UHC, has a scheme for the military, community-based health insurance for the rural areas and a scheme for the private sector (Chemouni, 2018). Kenya initiated a civil servants' medical scheme in 2015, but those in other occupations like agriculture and unskilled labour were not fully thought of even as they aim to make the scheme compulsory. With stratified schemes can reach more people to enrol in NHIF and therefore increase the pool and this would truly reduce barriers to accessing health care for those that need it the most.

Those who earned had higher incomes were progressively more likely to enrol compared to those with lower incomes. The findings of the study were comparable to studies in other places which linked high incomes to enrolment in health insurance while people with low incomes used their money on food before they considered health premiums (Alesane &

Anang, 2018). A study in Chile also linked high income with a high likelihood of enrolling in health insurance because the household could pay premiums without straining to provide basic needs (Kwarteng *et al.*, 2019). Households with multiple sources of income had higher incomes as they suffered less in case of shocks especially so for households that relied on agriculture and would require to wait until a farming season (mostly one year) is over to get some income. An additional source of income increased the total household income (Pinilla & Lopez-Valcarcel, 2020).

For NHIF to reach many people who have low incomes they needed to make their payments flexible to accommodate the lowest in the group who earn lower incomes. For the extremely poor, universal health coverage is a need yet they cannot afford to pay the premiums; and would need subsidization; these are households that used 80% of their income on food (World Bank, 2018). A health insurance subsidy programme for the poor and the elderly, could support coverage of the extremely poor. The government should benchmark with other countries like Rwanda, which achieved universal health coverage by first stratifying the schemes according to economic ability and then making enrolment in health insurance compulsory (Chemouni, 2018).

5.1.3 Perception of accountability in NHIF scheme and its influence on enrolment

People tend to enrol based on their perception of NHIF openness with information. Those who perceived NHIF as accountable in that they receive all the information they need from NHIF enrolled more in NHIF. Being open with information is an aspect of accountability (Kaplan, 2018). Fadlallah (2018) reported that households refused to enrol in national

health insurance because they did not have belief in the scheme. Doubting the institution becomes a major barrier to enrolment.

The respondents reported that the scheme kept emphasizing that they enrol but they did not explain about the scandals that have been in the media. The NHIF in Kenya has been explained to the local people to mean they will not be paying for healthcare if they pay NHIF consistently. However, there are numerous co-payments for NHIF, this caused NHIF to be perceived as not being accountable and deterred enrolment, that is, non-members who hear of the co-payments declined to enrol. The findings concurred with studies which reported co-payments as deterrents NHIF (O'Brien & Byrne, 2020). NHIF needs to make its benefits clear to the public to ensure the public does not view co-payments as an underground scheme to defraud them. A clear communication strategy including would be necessary including placing all information on accessible platforms and places like in social media, public places like hospitals and chiefs' offices to ensure the public gets information and perceives them as open and accountable.

5.1.4 Perception of quality of health care influence on NHIF enrolment

The results of this study indicated that majority prefer private health facilities. Private facilities have been linked with good quality of healthcare; respondents indicated their preference for private health facilities was because of no delays in getting service and fewer drug stock-outs. People preferred to pay more for quality services in private facilities than to be insured and access delayed services in government health facilities (Barasa *et al*., 2018). While NHIF covered even select private facilities, most of the respondents did not know that they could be covered or who could be covered in the private facilities. NHIF

would need to communicate to make it clear to the general public of the private health facilities available under the NHIF cover. Other studies in different places noted that the decision to seek health insurance was backed by the confidence that that the insurance could cover private health facilities where they are more likely to spend less time and get the services they want (Spieker, 2020).

Quality of healthcare was significantly associated with enrolment in NHIF; more people who were enrolled in NHIF rated the quality of healthcare as good. The respondents were not comfortable with the waiting time, hygiene, staff attitudes, equipment available, and availability of drugs. Lack of drugs was persistently mentioned as a deterrent to enrol due to long processes of procurement between the national government, the county governments and Kenya Medical Supplies Agencies. The findings corresponded to findings by Fadlallah (2018) which indicated that complaints about the quality of care affected the decision of workers to enrol in health insurance. Quality of health facilities has been associated with utilization of healthcare and enrolment in health insurance. Perceived poor quality of healthcare in health facilities caused deterrence in seeking healthcare, hence the unwillingness to enrol in health insurance associated with the health facilities (Fenny *et al*., 2018). Delayed disbursements to hospitals by NHIF also caused the hospitals to deny them some services or expose patients to longer waiting time which is seen as poor service and therefore discourages enrolment (Mbau *et al*., 2020). In Congo, poor quality of primary health care was seen as the largest impeding factor to achieving universal healthcare, where people declined to enrol when they considered that facilities covered lacked essential drugs, and equipment was not working, (Laokri *et al*., 2018).

Primary health facilities were associated with poor quality of healthcare, with rampant reports of lack of drugs or not finding the doctor (Macarayan *et al*., 2018). This resulted in pressure on higher-level public health facilities and non-functioning of the referral system because people sought healthcare where they thought they would be served and bypass lower-level facilities. Reforms in the public health sector were necessary and NHIF could learn from Thailand which achieved universal health coverage by first improving the country health system to make the health facilities more responsive to the needs of the people (Tangcharoensathien *et al*., 2020). Public participation through giving feedback on services received would help NHIF assess the quality of care. These efforts to improve quality of care would go a long way in making the system responsive and attractive to the public thus increase enrolment.

NHIF needs to revise the accreditation policy of health facilities to ensure only those which meet a minimum set of standards for accreditation including equipment; medical staff and essential drugs are accredited. Government facilities are automatically accredited without prior assessment for the standard of care, which happens in private health facilities before they are accredited. With automatic accreditation government facilities did not put a lot of effort to ensure they had enough staff, facilities and working equipment, and drugs to be accredited. This led to people shying away from enrolling in NHIF especially those who did not know that private health facilities were also covered by NHIF. They resulted in seeking healthcare where they perceive to be higher quality even when it means paying from their pockets.

There were different committees all tasked with inspecting health facilities, which caused duplication of activities (Marx *et al*., 2018). This contrasted reports from some people who

failed to seek health care and stayed at home citing poor quality of care: delays in receiving treatment, lack of drugs and even for some they end up contracting other infections while in the hospitals where health care workers are not interested in their plight (Ngugi *et al*., 2017). The committees and boards involved in hospital inspection include the board of medical practitioners and dentists, pharmacy and poisons board, public health officials and infection control committee (Ministry of Health, 2018). A multi-stakeholder committee with representatives from each of these groups would be more effective in ensuring quality health care to patients in both public and private health facilities. This would set a path for the development of a policy on the provision of quality healthcare in Kenya. NHIF left the role of ensuring quality healthcare to the Ministry of Health, like provision of drugs. NHIF would need to play a more significant role and enforce cancellation of accreditation certificates of the facilities until services are improved and could include patient feedback in their facility inspections. These measures could increase patient confidence in NHIF resulting in higher enrolment.

5.2 Conclusion

Based on the objectives and the findings of the study the following conclusions can be made:

i) The extent of NHIF enrolment was 35% which was below the target of 100% by 2022 in progress towards universal health coverage

ii) Socio-economic factors are associated with enrolment in NHIF.

iii) The perception of people on accountability of NHIF influences enrolment with more people who got the information they need enrolled in NHIF.

iv) The perception of quality of care offered in health facilities accredited by NHIF influenced enrolment, with those who were satisfied with the quality of care more likely to enroll in NHIF.

5.3 Recommendations

5.3.1 Recommendations from the study

Based on the results, this study recommends the following:

i) The county government should come up with strategies to increase enrolment through making targeted advocacy messages to educate the public on unpredictable risks, revive the Health Insurance Subsidy Programme (HISP) for the poor and the elderly and advocate for flexible payments for poor households and also ensure quality healthcare in accredited facilities.

ii) The government should come up with strategies to improve income and increase education including implementing policy on basic education and minimum wage and also the health insurance subsidy program.

iii) The NHIF scheme should ensure openness with information on benefits, the services covered in the hospitals and the services which need co-payments and information on its operations which will improve the perception of accountability of the scheme by the public and attract people to enroll in NHIF.

iv) The county government together with the national government should incorporate feedback from the patients and healthcare users when collecting information on quality of healthcare in the health facilities and incorporate the feedback into the healthcare monitoring and evaluation and planning to improve on aspects the public

find important to increase the public perception of quality of care in NHIF accredited facilities and therefore increase enrolment in NHIF.

5.3.2 Recommendations for further research

Research should be done on effectiveness of social protection programs for indigents as this will need to be put in place to care for indigents who may not afford to pay for health insurance. The study will fill in the information gap on why the social protection programs fail and how they can be made effective.

A patient satisfaction survey should be carried out on NHIF accredited institutions so as to give information on the kind of service the patients get and which would help NHIF put in place measures to link hospital accreditation to quality care thus attract more people to enroll.

REFERENCES

Adewole, D. A., Akanbi, S. A., Osungbade, K. O., & Bello, S. (2017). Expanding health insurance scheme in the informal sector in Nigeria: awareness as a potential demand-side tool.*The Pan African medical journal*, *27*, 52. *doi*:10.11604/pamj.2017.27.52.11092

Alesane, A., & Anang, B.T. (2018). Uptake of Health Insurance by the Rural Poor in Ghana: Determinants and Implications for Policy. *The Pan African Medical Journal; 31:124*. Doi:10.11604/Pamj.2018.31.124.16265.*http://www.Panafrican-Med-Journal.Com/Content/Article/31/124/Full*

Allcock, S. H., Young, E. H., & Sandhu, M. S. (2019). Sociodemographic Patterns of Health Insurance Coverage in Namibia. *International journal for equity in health*, *18*(1), 16. doi:10.1186/s12939-019-0915-4

Aregbeshola, B.S., Khan, S.M., (2018). Out-of-pocket payments, Catastrophic Health Expenditure and Poverty among Households in Nigeria in 2010. *Internaltional Journal Health Policy Manag.* Sep 1: **7**(9):798-806. Doi:10.15171/ijhpm.2018.19.

Barasa E., Kazungu J., Nguhiu P., (2018). Examining the Level of Inequality in Health Insurance Coverage in 36 Sub-Saharan African Countries. *BMJ Global Health* 2021, **6:**e004712

Barasa E., Rogo, K., Mwaura N., Chuma, J., (2018). Kenya National hospital Insurance fund reforms: implications and lessons for universal health coverage. *Health systems and reforms*, **4,** doi.org/10.1080/23288604.2018.151.3267

Bhusal U.P., Sapkota V.P., (2021). Predictors of Health Insurance Enrolment and Wealth related Inequality in Nepal: Edivdence from Mtiple Indicator Cluster Survey (MCIS) 2019. *BMJ* 10.1136/bmjopen-2021.

Bolhaar, J., Lindeboom, M., Klaauw, B., (2008). *A Dynamic Analysis of the Demand for Health Insurance and Health Care.* VU University Amsterdam: Netherlands.

Chemouni, B., (2018). The Political Path to Universal Health Coverage: Power, Ideas and Community-Based Health Insurance in Rwanda. *World Development Vol 180 pg 78-89.* https://doi.org/10.1016/j.

Embleton, L., Ayuku, D., Kamanda, A., Atwoli, L., Ayaya, S., Braitstein, P., (2014). Models of Care for Orphaned and Separated Children and Upholding Children's Rights: Cross-sectional Evidence from Western Kenya. *BMC International Health and Human Rights 2014, 14:9* http://www.biomedcentral.com/1472-698X/14/9

Fadlallah, R., El-Jardali, F., Hemadi, N. *et al.* (2018). Barriers and Facilitators to Implementation, Uptake and Sustainability of Community-Based Health Insurance Schemes in Low- and Middle-Income Countries: A Systematic Review. *Int J Equity Health* **17**. https://doi.org/10.1186/s12939-018-0721-4

Fenny, A., Yates, R., And Thompson R., (2018). Social Health Insurance Schemes in Africa Leave Out the Poor. *International Health, Volume 10, Issue 1, January 2018, Pages 1–3,* Https://Doi.Org/10.1093/Inthealth/Ihx046

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *the Qualitative Report* Volume 8 Number 4 December 2003 597-607 http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf

Health Records, 2016). Moi Teaching and Referral Hospital Audit Report. MTRH-Eldoret

Hone T., TayuLee J., Maieed A., Conteh L. (2017). Does Charging Different User Fees for Primary and Secondary Care Affect First Contact with Primary Health Care? A Systematic Review. Health Policy and Planning 32 (5), 723-731. Oxford Academic

Joppe. M., (2000). *The Research processes.* http://www.Ryeson .ca/-mjoppe/rp.htm

Kaplan, O., Nussio, E., (2018). Community Counts: The Social Reintegration of Ex-Combatants in Colombia. *Conflict management and peace studies*. Sagepub.co.uk/journalsPermissions.nav doi:10.1177/0738894215614506

Kenya National Bureau of Statistics, (2010). *Kenya 2009 Population and Housing Census Highlights.* Nairobi, Kenya: KNBS

Kenya National Bureau of Statistics, (2019). *Economic Survey 2019.* Nairobi, Kenya: KNBS

Kwarteng A., Akazili J., Welaga P., (2019). The State of Enrolment on the National Health Insurance Scheme in Rural Ghana after Eight Years of Implementation. *International Journal for Equity in Health* **19,** 4. https://doi.org/10.1186/s12939-019-1113-0

Kituku K. A., Amata, E., & Muturi, W. (2016). Determinants of The Uptake of NHIF Medical Cover by Informal Sector Workers: A Case of UNAITAS Sacco Members in Murang'a County. *American Journal of Economics. Vol 1. No. 1(2016).*

Kotoh, A.M., Aryeetey, G.C., Geest, V., (2018). Factors that Influence Enrolment and Retention in Ghana National Health Insurance Scheme. *International J Health Policy Management.* **7** (5)L443-454. Doi:10.15171/ijhpm.2017.117

Laokri S., Soelaeman R., Hotchkiss D.R., (2018). Assessing Out of Pocket Expenditures for Primary Health Care: How Responsive Is the Democratic Republic of Congo

Health System to Providing Financial Risk Protection? *BMC Health Serv Res. 2018; 18: 451*.

Macarayan E.K., Gage A.D., Doubova S.V., Guanais F., Lemango E.T., Waiswa P., & Kruk M.E., (2018). Assessment of quality of primary care with facility surveys: a descriptive analysis in ten low-income and middle-income countries. *Lancet Global Health 2018; 6: e1176–85.*

Marx M., Nitschke C., Szecsenyi J., *et al.,* (2018). If You can't measure it – you can't change it – a longitudinal study on improving quality of care in hospitals and health centres in rural Kenya. *BMC Health Services Research* **18,** 246. Doi.org/10.1186/s12913-018-3052-7

Mathauer I., Torres L.V., Kutzin J., Hanson K., (2019). Pooling Financial Resources for Universal Health Covrage: Options of Reform. *Bulleting of World Health Organization2020,98:132-139.* Doi:http://dx.doi.org/10.2471/BLT.19.234153

Mbau, R. & L. Gilson L., (2018) Influence of Organizational Culture on the Implementation of Health Sector Reforms in Low- and Middle-Income Countries: A Qualitative Interpretive Review. *Global Health Action,* 11:1, DOI: 10.1080/16549716.2018.1462579

Ministry of Health, (2018). *Kenya Household Health Expenditure and Utilization Survey Report.* Nairobi: Ministry of Health.

Ministry of Health, (2020). A Case for Increasing Public Investments in Health Raising Public Commitments to Kenya's Health Sector. Ministry of Health, Nairobi.

Munge, K., Mulupi, S., Barasa E., Chuma, J., Mutinda, (2019). A Ctirical Analysis of Purchasing Arrangements in Kenya: The Case of Micro Health Insurance. *BMC Health Services Research,* **19,** 45:2019 doi.org./10.1186/s12913-018-3863-6

Mwaura G.W., Kamano J.H., Mwangi A.W., (2021). Awareness, Uptake and Factors Associated with NHIF Uptake in Western Kenya; A case of 4 coutnies – Busia, Transnzoia, Vihiga and Siaya. *Research Square doi:https://doi.org/10.21203/rs.3rs-479001/v2*

Ngugi, A. K., Agoi, F., Mahoney, M.R., Lakhani, A., Mang'ong'o, D., Nderitu, E., Macfarlane, S. (2017). Utilization of health services in a resource-limited rural area in Kenya: Prevalence and associated household-level factors. *PloS one, 12(2), e0172728. doi:10.1371/journal.pone.0172728*

Nyman, J. A. (2001). *The Theory of Demand for Health Insurance.*Stanford University Press, Stanford. http://www.sup.org/book

O'Brien G.L., Sinott S., Byrne S., (2020). Out of Pocket or out of control: A Qualitative Analysis of Healthcare Professional Stakeholder Involvement in Pharmaceutical Policy Change in Ireland. *Health Policy* volume 124, Issue,4, pages 411-418. Doi.org/10.1016/j.healthpol.2020.02.011

Payne, G. and Payne, J., (2004). *Key Concepts in Social Research*, London: Sage Publications

Panda, P, Dror, I, Koehlmoos, T, Hossain, S, John, D, Khan, J, Dror, D (2013). *What factors affect take up of voluntary and community-based health insurance programmes in low- and middle- income countries? A systematic review (Protocol)*. London: EPPI-Centre, Social Science Research Unit,Institute of Education, University of London

Parliamentary Budget Office, (2018). *Budget Watch for 2018/19 and the Medium-Term* August 2018 |Edition No. 11 E. Parliament of the Republic of Kenya.

Pinilla, J., Lopez-Valcarcel, B.G., (2020). Income and Wealth as Determinants of Voluntary Private Health Insuracne: empirical evidence in Spain, *BMC Public Health* ***20,*** 1262 (2020). https://doi.org/10.1186/s12889-020-09362-5

Posner M.I., Sheese B.E., Odludaş Y., Tang, Y., (2006). Analyzing and shaping human attentional networks. *Neural Netw. N*ov;19(9):1422-9. doi: 10.1016/j.neunet.2006.08.004. Epub 2006 Oct 23. PMID: 17059879.

Rabbani A., Sarker M., (2017). Employer-Sponsored Health Insurance: Low Premiums, Low Savings. *International Growth Centre Blog* (09 Mar 2017).

Salari P., Giorgio L.D., Ilinca S., Chuma J., (2018). The Catastrophic and Impoverishing Effects of Out-of-Pocket Healthcare Payments in Kenya. *BMJ Global Health,* Vol. 4, Issue 6. Doi.org.10.1136/bmjgh-2019-001809

Savitha, B., Banerjee, S., (2021). Education and Experience as Determinants of Micro Health Insurance Enrolment. *International Journal Health Policy Manag,* **10** (4):192-200. doi.10.34172/ijhpm.2020.44

Seddoh, A., & Sataru, F. (2018). Mundane? Demographic Characteristics as Predictors of Enrolment onto The National Health Insurance Scheme in Two Districts of Ghana. *BMC Health Services Research, 18*(1), 330. Doi:10.1186/S12913-018-3155-1

Spieker N., (2020). The Business Case for Quality of Health Care: Improving Helath Care in Low and Middle Income contries, A Case Book. *Cham (CH): Springer 2020. Chapter 7.* Doi:10.1007/978-3-030-43112-9_7

Suchman, L., Hashim, C.V., Adu, J. *et al.,* (2020). Seeking Care in the Context of Social Health Insurance in Kenya and Ghana. *BMC Public Health* **20,** 614. doi.org/10.1186/s12889-020-08742-1

Sundays E.M., Ngaira J.K., Mutai C., (2015). Determinants of Uptake and Utilization of National Hospital Insurance Fund Medical Cover by People in the Informal Sector in Kakamega County, Kenya. *Universal Journal of Public Health 3(4): 169-176*, http://www.hrpub.org

Tangcharoensathien, V., Tisayaticom K., Suphanchaimat, R., *et al.,* (2020). Financial Risk Protefction of Thailands Universal Health Coverage, Results from series of National Household Surveys between 1996 and 2015. *Int J Equity Health,* **19**, 163. https://doi.org/10.1186/s12939-020-01273-6

Tikkanen R., Osborn R., Mossialos E., *et al.*, (2020). Internationnal Health Care System Profiles Japan. *The CommonWealth Fund* 2020-004

United Nations, (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development.* A/RES/70/1

Wang H., Otoo N., Dsane-Selby L., (2017). Ghanian National Health Insurance Scheme. Improving Financial Sustainability Based on Expenditure Review. World Bank Group.

Wielen N., Falkingham J., And Channon A.A., (2018) Determinants of National Health Insurance Enrolment in Ghana Across the Life Course: Are the Results Consistent Between Surveys? *International Journal for Equity in Health* **17**:49. Https://Doi.Org/10.1186/S12939-018-0760-X

Wolla, S.A., Sullivan, J., (2017). Education, Income, and Wealth. *Page One Economics.* https://fred.stlouisfed.org/graph/?g=7yKu

World Bank, (2018). *Delivering Quality Health Services:* A global Imperative for universal health coverage. Geneva CC BY-NC-SA 3.0 IGO.

World Bank. (2018) *Kenya Poverty and Gender Assessment 2015/16 - A Decade of Progress and the Challenges Ahead*. World Bank.

World Health Organization, (2010). *The World Health Report: Health Systems Financing: The Path to Universal Coverage*. WHO Press, Geneva, Switzerland

World Health Organization, (2017a). *World Health Statistics 2017: Monitoring Health for the SDGs, Sustainable Development Goals*. WHO Press, Geneva, Switzerland

World Health Organization and International Bank for Reconstruction and Development / The World Bank, (2017b). *Tracking Universal Health Coverage: 2017 Global Monitoring Report*. The World Bank; License: CC BY-NC-SA 3.0 IGO

World Health Organization, (2018) Can People Afford to Pay for Health Care? New evidence on Financial Protection in Germany. *Word Health Organization Barcelona* http://www/euro.who.int/pub

APPENDICES

Appendix I: Questionnaire

Introduction:

Greetings,

My name is Emma Wanjiru. I am a student from Kenyatta University doing Masters in Public Health (Monitoring and Evaluation). I am conducting a research on Enrolment of NHIF as part of my education requirements. I will take you through the questions. Remember there is no right or wrong answer and all information given will be handled with strict confidentiality. Thank you for your time.

LOCATION	
VILLAGE	
HH IDENTIFICATION NO	
DATE OF INTERVIEW	
INITIALS OF INTERVIEWER	

SECTION A:

1) What is your age? ***(tick as appropriate)***

…….

2) Indicate your gender ***(tick as appropriate)***

Male……..…

Female……

3) Marital status ***(tick as appropriate)***

Never married…….

Married or living together……..

Divorced/separated……....

Widowed……

4) Occupation ***(tick as appropriate)***

Professional/technical…….....

Sales & services……

Unskilled manual……..

Agriculture……

Others…… specify…….

5) Have you ever attended school?

Yes…….

No…….. *[Go to Question 7]*

6) What is the highest level of Education level attained *(tick as appropriate)*

Some primary……

Completed primary……

Some secondary…….

Completed secondary…….....

Tertiary……...

SECTION B:

7) Have you ever heard of NHIF?

Yes……...

No……

8) What do you know about NHIF? Shed light on what you know about NHIF in regards to:

Aspect	Has information	Have an idea	No information/ idea
Cost: *How much do NHIF premiums cost?*	……	……..	……..
Eligibility: *Who is qualified to enroll in NHIF?*	……	……	……..
Frequency of payments:	……	…….	……..

Who is covered?	……	……..	……

9) Are you enrolled in the NHIF?

Yes……...……. (*Go to Question 10*)

No ……..……..

10) Was there a time you were enrolled in NHIF?

Yes……...…….

No ……..…….. *(Go to Question 10)*

11) Are you aware of the government agenda to have all enrolled in NHIF?

Yes……..

(explain how you got the information)…….

No…….

12) What discouraged you from being an active NHIF member?

Explain briefly…….……..…

……..

……..…….

13) What factors encouraged or discouraged you from joining NHIF?

……

……

14) Are you or any other member of your household enrolled in any other type of health insurance? If yes, specify which one…….

……..

……..

15) Please indicate the number of people who live in this household and whether they are covered by NHIF *(who eat their meals and sleep here)*

Age of person	**Relationship to household head**	**Indicate 'yes' for covered by NHIF or 'no' if otherwise**
Total members ……		

16) Have you or a member of your household required healthcare in the last 3 months?

Yes ……..

No……. *[go to Question 19)]*

17) Please explain how you paid for the health services

Using NHIF…….. *[go to Question (16)]*

Using cash to pay……..

Did not pay…….(Explain)…….

…….

18) How much money did you use to pay for healthcare the last time you visited a health facility?.....

19) Please state how you raised the money to pay for healthcare

From household income…….

Sold household assets…….

Borrowed money to pay…….

Others (specify)…….

…….

20) Do you think if you were enrolled in NHIF scheme, payment for health care would have been easier? Explain……..

……..

SECTION C:

Instruction to interviewer: for this section calculate the average income per month using the daily, weekly earnings. For daily earnings multiply by number of days worked in a month, for weekly multiply by 4, for quarter-yearly and semi-annual payments divide by the number of months. For people paid only when work is available , estimate the total amount they received in the previous month.

21) What do you do for a living?

(State the main engagement you get your income from)

……

……

22) What is the frequency of your earning?

Monthly…….

Weekly……..

Daily……..

Other (explain)……..

23) Please state the amount earned per month

Below 5000	( )
6000-10000	( )
11000-15000	( )
16000-20000	( )
20000-50000	( )
Above 50,000	( )

24) Do you have another source of income apart from these? ***(include rent, agricultural income, government cash transfers)***

Yes…….

No…….. *[go to Question (30)]*

25) If yes, specify how often…….

26) Indicate the average income per month from the above engagement

Below 5000 ( )

6000-10000 ( )

11000-15000 ( )

16000-20000 ( )

20000-50000 ( )

Above 50,000 ( )

27) Is there any member of this household who is above 18 years who contributes to the household income? ***(this includes spouse)***

Yes…….

No……

28) If yes, how much does this person earn?

Below 5000 ( )

6000-10000 ( )

11000-15000 ( )

16000-20000 ( )

20000-50000 ( )

Above 50,000 ( )

29) What is the total amount of money this household gets per month? ***(add the income per month from question 24, 25 and 26 to get total income per household per month)***

Below 5000 ( )

6000-10000 ( )

11000-15000 ( )

16000-20000 ( )

20000-50000 ( )

Above 50,000 ( )

30) Estimate the fraction of your income used <u>per month</u> on healthcare for both you and the household members for the last 3 months (*include money to buy drugs, and pay any hospital fee*)……...……

……

31) Kindly estimate what fraction of your income you use on food <u>per month</u> for the last 3 months …………..

……..

32) Estimate the fraction of money used on medical care out of the income that remains after food budget <u>per month</u> for the last 3 months. (R*emember to exclude the money allocated for food but include money to buy drugs, and pay any hospital fees)*…………..……..

……..

SECTION D:

33) When you are feeling unwell what do you do?

Go to health facility..……(*go to question 35)*

Stay at home……..... *(go to question 36)*

Go to traditional healers…….....*(go to question 36)*

Purchase drugs from pharmacies or shops……..*(go to question 36)*

Other (*specify)*…… *(go to question 36)*

34) Please specify your first choice of facility when you seek health care for an illness?

Public health facility (government facilities)……..

Private health facilities……..

Missionary health facilities……

35) What influences your decision on where to seek health care?

Cost of services……

Distance……

Quality of services……

Type of ailment …….

Others *(specify)*……..

36) *(Consider all health facilities around your home area for this question)*

Is the health facility nearest to your home NHIF accredited?

Yes…….

No……..

I do not know…….

37) <u>I would like to know what you feel about the services offered in NHIF accredited facilities which you prefer to use: Please mark the aspects according to your own perception from excellent being the best marked with 5 to very bad marked as 1.</u>

	Excellent	**Good**	**Fair**	**Bad**	**Very Bad**
Medicine availability	1	2	3	4	5
Medical information consider privacy, customer enquiries desk, service desk,	1	2	3	4	5
Staff behaviour	1	2	3	4	5
Hospital infrastructure: consider , water tap, waiting bays	1	2	3	4	5
Waiting time	1	2	3	4	5
Services available in the hospital: laboratory, wound dressing, maternal care	1	2	3	4	5
Hygiene and cleaning: latrines or toilets, hospital visibly clean	1	2	3	4	5

38) Does quality of care in accredited health facilities encourage or discourage you from enrolling in NHIF? Explain……

……

<u>I would like to know how much you perceive accountability in the NHIF scheme. Please answer accordingly to the following statements:</u>

39) Do you feel you get all the information you need?

Yes……..

No…….

40) Are you aware of the NHIF enrolment charges per month? (*Select the category work and indicate the amount)*

Formal sector……..Ksh

Informal sector……Ksh

41) What do you think about the amount of money NHIF charges per month?

High (not affordable)……....

Moderate ……..

Low (affordable)……...

42) What services does NHIF cover? (*tick all the respondent knows*)

Outpatient services……..( )

Inpatient services…….( )

X-rays……...( )

Surgery…….( )

Maternity package……...( )

Dialysis…….( )

Chemotherapy services……...( )

Family planning……..( )

43) Are you satisfied with the current package of services covered by NHIF?

Yes……..

No……

44) What other services would you like to see provided?

…….. ……

……

45) Does what you hear concerning NHIF influence your decision to enrol in NHIF?

It causes me to enrol…….

It discourages me from enrolling……..

46) Is there anything more you know that influences decision to enrol or not? Explain briefly……..

.....

Thank you!

Appendix II: Interview Guide

Introduction:

Greetings,

My name is Emma Wanjiru. I am a student from Kenyatta University doing Masters in Public Health (Monitoring and Evaluation). I am conducting a research on Enrolment of NHIF as part of my education requirements. I will take you through the discussion regarding NHIF enrolment. Remember there are no right or wrong answers and all information given will be handled with strict confidentiality. Thank you for your time.

Role of Key-informant	
Number of years worked there	
Age of Key informant	
Telephone number	
Date of interview	

1) Comment on NHIF enrolment in this area

2) There have been many reported cases countrywide of people overstaying in health facilities due to lack of money to pay for healthcare. Have you met people with such cases?

What do they resort to enable them pay for healthcare?

From what you have seen, comment on the effect of large medical bills on the households?

What help do you offer them?

3) What do you think about the quality of healthcare in Uasin Gishu county?

Explain how you think this can influence enrolment. (Consider medical drugs availability, delays in the health care and staff attitudes)

4) NHIF has been covering inpatient services only until 2015 when they increased the range of services covered. In regard to that,

Do you think the people are aware of the changes in services covered?

Do you think having few public facility offering inpatient services is likely to discourage enrolment?

Do you think this facilities are enough to serve the people?

Do you think people prefer public or private health facilities?

What would you say drives people's choice of health facility?

Do you think this could affect enrolment of NHIF amongst residents of Kapyemit Location?

5) Do you feel like the number of NHIF-accredited health facilities in the county is enough?

How many accredited facilities do you know?

Would you say the accredited facilities are accessible in terms of transport to the facility?

Would you say people are aware of all accredited facilities?

6) The NHIF has had negative publicity due to fraud and mismanagement of resources.

Please explain how this is likely to affect enrolment.

Would you say that NHIF has reclaimed public trust?

7) Do you think the county government is doing enough to encourage enrolment?

Please explain you answer

8) Suggest ways you would think the NHIF would be made more attractive to people in the informal sector

(Consider scheme design, flexibility in collection of premiums and government subsidies)

9) Majority of households indicate having some form of income.

Why do you think they fail to take up NHIF?

What should be done for households with low or irregular income?

10) What else do you think hinders enrolment of NHIF?

Appendix III: Informed Consent Form

TITLE OF STUDY: National Hospital Insurance Fund Enrolment in Uasin Gishu County, Kenya

INVESTIGATOR: Wanjiru Emma Phyllis

INSTITUTION: Kenyatta University

INTRODUCTION: National Hospital Insurance Fund is the umbrella body mandated to provide health insurance for all Kenyans. Enrolment of NHIF in Kenya remains low at 19% in 2018 while catastrophic health expenditures push households into poverty.

PURPOSE OF THE STUDY: To find out barriers and enablers of National Hospital Insurance Fund enrolment in Uasin Gishu County, Kenya.

STUDY PROCEDURES: The principal investigator together with research assistant will recruit residents of Kapyemit location for interviews. Participants will be asked questions including their demographic characteristics, health status, enrolment in NHIF status, hospitalization cases and costs arising from seeking medical assistance. If you are willing to participate, the principal investigators request you give permission by signing or putting thumb print at the bottom of this page.

RISKS/DISCOMFORTS: There are no direct risks to the subjects who will participate.

BENEFITS: This research is purely academic and as such there are no direct benefits to the participants. the findings however will benefit the government and the society at large by providing information to solve enrolment challenges. Participants taking part in the study will get to ask questions and seek clarifications on various issues on NHIF.

CONFIDENTIALITY: All information given will be treated with utmost confidentiality, no names will be used in the study documents, unique identification codes will be used. All documents with personal identifying information such as this consent will be safely locked separately from questionnaires to ensure confidentiality.

CONSENT AGREEMENT

I have read the information, or it has been read to me, I have had the opportunity to ask questions and seek clarifications and all queries addressed to my satisfaction. I consent voluntarily to participate as a subject in the study and understand that I have the right to withdraw from the study at any time without in any way affecting my future health care.

Would you like to participate in the study (*please tick below)*

Yes…….. No…….

Participant name…….. (optional)

Signature/thumb print…… Date…….

Researchers signature…….…… Date……

(You will be given a copy of this form to take with you). Thank you for your time.

CONTACTS: In case of any queries or concerns, please contact the following:

Emma Wanjiru- Principal Investigator

Cell phone no: 0727907748

Email: emmaphyllis17@gmail.com

Or

David Cheruiyot- Main Research Assistant

Community Health Worker, Kapyemit Location

Cell phone no: 0785216462

Email: dcheruiyot@yahoo.com

Or

Dr. Justus Osero - supervisor

Kenyatta University

Contacts: 0724869330

Email: Justus.osano@ku.ac.ke

Or

Kenyatta University Ethics Review Committee

P.O. Box 43844-00100 Nairobi

Email: kuerc.secretary@ku.ac.ke

Appendix IV: Kenyatta University Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School

DATE: 25th November, 2016

TO: Emma Phyllis Wanjiru
C/o Community Health
Department.

REF: Q57/27353/2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 21st September, 2016 entitled "National Hospital Insurance Fund Enrolment in Uasin Gishu County, Kenya".

You may now proceed with your Data collection, subject to clearance with the Director, Ethics Office, Kenyatta University and Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

KENYATTA UNIVERSITY OFFICE OF DEAN 04 JUL 2018 GRADUATE SCHOOL P.O. BOX 43844-00100 NAIROBI

GIDEON KAIMENYI
FOR: DEAN, GRADUATE SCHOOL

CC. Chairman, Community Health Department

Supervisors:

1. Dr. Eunice Chomi
   C/o Community Health Department
   Kenyatta University

2. Dr. Andre Yitambe
   C/o Health Management Informatics Department
   Kenyatta University

GK/rwm

Appendix V: Ethics Review Approval

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575
Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844,
Nairobi, 00100
Tel: 8710901/12

Our Ref: **KU/ERC/ APPROVAL/VOL.1** (189) Date: 16th August, 2018

Emma Phyllis Wanjiru
P.O Box 43844-00100
NAIROBI

Dear Emma,

APPLICATION NUMBER: PKU/871/1935 "NATIONAL HOSPITAL INSURANCE FUND ENROLMENT IN UASIN GICHU COUNTY, KENYA"

6. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic **"National Hospital Insurance Fund Enrolment In Uasin Gichu County, Kenya"** received on 4th July, 2018 and discussed on 14th August, 2018.

2. APPLICANT

Emma Phyllis Wanjiru

3. SITE

Uasin Gichu County, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines and **APPROVED that the research may proceed for a period of ONE year from 14th August , 2018.**

5. ADVICE/CONDITIONS

i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

KENYATTA UNIVERSITY
OFFICE OF THE CHAIRMAN
05 SEP 2018
ETHICS REVIEW COMMITTEE
P.O. Box 43844 - 00100 NAIROBI

PROF. JUDITH KIMIYWE
CHAIRMAN ETHICS REVIEW COMMITTEE

I ..... accept the advice given and will fulfill the conditions therein.

Signature..... Dated this day of...05/09/2018..... 2018.

cc.
DVC-Research Innovation and Outreach

Appendix VI: Permit from the County of Uasin Gishu

Tel. NO: direct line: 0722945912
Website: www.uasingishu.go.ke
Email: mosesrutto@uasingishu.go.ke
Or ruttomoses@gmail.com

THE CHAMPIONS

When Replying, Please Address to:
Administrator,
Kapsaos ward-Turbo Sub-County,
Uasin-Gishu County
P.O. Box 40 – 30100
Eldoret, Kenya.
24/10/2018

TO WHOM IT MAY CONCERN

RE: EMMA PHYLLIS WANJIRU ID No 24712664

This is to confirm that the above named person is a student at Kenyatta University taking Master of Public Health in Monitoring and Evaluation

Currently she is doing a research on "national Hospital Insurance Fund Enrollment in Uasin Gishu" Kapsaos ward.

Kapsaos Uasin Gishu administration office is aware of her activities and has been given permission to do so.

An assistance accorded to her will be highly appreciation.

Yours faithfully

COUNTY GOVERNMENT OF UASIN GISHU
TURBO SUB-COUNTY
24 OCT 2018
Sign
KAPSAOS WARD

Moses Ruttoh
Ward administrator, Kapsaos.

Cc Sub- County Administrator, Turbo.

Appendix VII: NACOSTI Approval

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/94488/26273**

Date: **27th November, 2018**

Emma Phyllis Wanjiru
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"National Hospital Insurance Fund enrolment in Uasin Gishu County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Uasin Gishu County** for the period ending **26th November, 2019.**

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

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

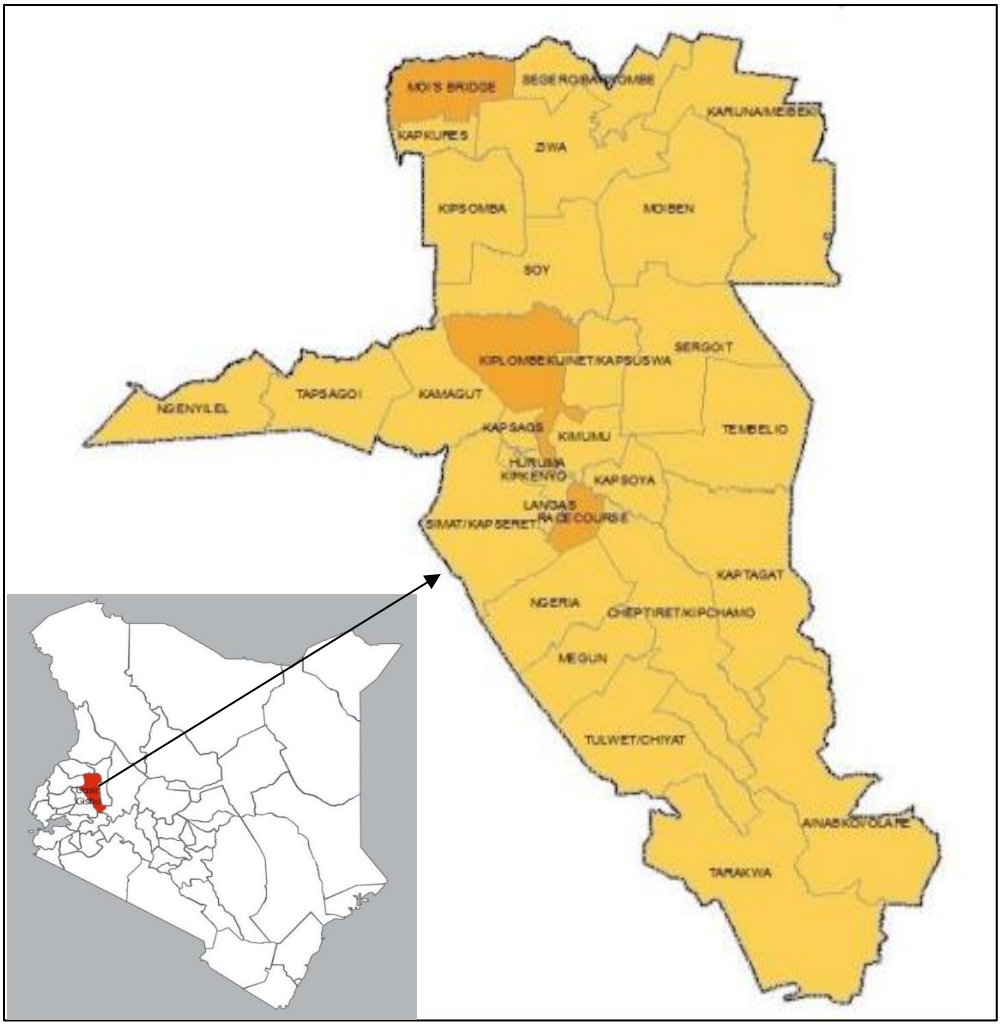
Copy to:

The County Commissioner
Uasin Gishu County.

The County Director of Education
Uasin Gishu County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

Appendix VIII: Map of study area



Map from: Uasin Gishu County ICT RoadMap (2015)