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UPTAKE AND RETENTION OF NHIF BY THE INFORMAL SECTOR: THE CASE OF THARAKA NITHI AND LAIKIPIA COUNTIES

MARGARET N. MACHARIA

MASTER'S IN PUBLIC POLICY AND MANAGEMENT

2023

UPTAKE AND RETENTION OF NHIF BY THE INFORMAL SECTOR: THE CASE OF THARAKA NITHI AND LAIKIPIA COUNTIES

MARGARET N. MACHARIA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC POLICY AND MANAGEMENT AT STRATHMORE UNIVERSITY

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STRATHMORE BUSINESS SCHOOL

STRATHMORE UNIVERSITY

NAIROBI, KENYA

MAY 2023

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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ACKNOWLEDGEMENT

Words cannot express my gratitude to my supervisor Dr. Ben Ngoye for his invaluable and patient guidance throughout this journey. I would like to extend my heartfelt appreciation to the defense committee and the faculty of the MPPM program for generously sharing their knowledge and expertise.

Furthermore, I am indebted to my classmates, specifically the MPPM 2019 modular cohort, for their late-night feedback sessions and unwavering support. Their moral encouragement played a significant role in my success.

I would like to express my deepest gratitude to those who directly contributed to the completion of this work, including the respondents living in Laikipia and Tharaka Nithi Counties. Their insights and cooperation were indispensable. Special thanks go to Dr. Lucy Macharia and Mrs. Judy Otele for being a sounding board and giving guidance.

I am incredibly thankful for the unwavering support of my colleagues, who believed in me and celebrated every milestone with me.

My appreciation knows no bounds when it comes to my family. I am eternally grateful to my husband, Dan, for his unwavering commitment and constant encouragement throughout the years. To my children, Kega and Tugi, you are my shining stars. To my parents, Mr. and Dr. Macharia, and Ms. Huini Kabui, thank you for your prayers, support, and for providing me with the space to pursue my passions.

I owe a debt of gratitude to my siblings and their children, particularly Priscilla and Waweru, for their kindness. Rachel, along with her children Leroy and Renee, I am immensely grateful for your babysitting assistance, which allowed me to attend classes and complete assignments without distractions and with the comfort that my newborn was in safe hands.

Finally, I want to express my heartfelt gratitude to my friends for their unwavering support. I am immensely grateful for your presence throughout this journey. May God bless you all.

ABSTRACT

Health insurance schemes are often hailed as key to enhancing universal health coverage which is part of the Sustainable Development Goals. The current health insurance uptake in Kenya still lags behind most other developing countries as the data indicates that health insurance uptake has mainly been limited to the middle-class and upper-class citizens within the country. The main objective of the study was therefore to determine the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The specific objectives of the study were to examine the effect of mass education campaigns, demographic factors, socio economic status and the effect of quality of service on the uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study used Rational Choice theory and Nudge theory and adopted a descriptive research design. The target population comprised of 11,894 informal workers from Tharaka Nithi County and 13,246 informal workers from Laikipia County registered with NHIF. The stratified random technique was used to obtain 394 respondents. The study used structured close-ended questions to collect primary data. Analysis was done quantitatively by employing inferential and descriptive statistics. Presentation of data was done through frequencies, mean, standard deviation and percentages and presented in form of tables. The study found a positive association between mass education campaigns and uptake and retention of NHIF. There existed a moderate positive relationship between demographic factors and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. There was a positive association between socio economic status and uptake and retention of NHIF. There was also a moderate positive relationship between the quality of service and uptake and retention of NHIF. Based on these findings, the study recommends that NHIF should further the mass education campaigns so reach to an even a larger audience to increase the uptake and retention of NHIF by the informal sector. The NHIF should also consider targeted tariffs for various groups of people so as not to limit the uptake to some. The NHIF scheme could also be organized in a way that accommodates those in different occupations, with different educational backgrounds and income levels. Finally, NHIF should encourage and maintain the sufficiency in healthcare service delivery in the counties to promote the uptake and retention of NHIF by the informal sector.

Key Words: *NHIF, mass education campaigns, demographic factors, socio economic status, quality of service.*

TABLE OF CONTENTS

DECLARATION ..... **ii**

ACKNOWLEDGEMENT ..... **iii**

ABSTRACT ..... **iv**

LIST OF FIGURES ..... **iv**

LIST OF ABBREVIATIONS ..... **v**

DEFINITION OF KEY WORDS ..... **vi**

CHAPTER ONE: INTRODUCTION TO THE STUDY **1**

1.1 Background Information 1

1.1.1 Uptake and Retention of NHIF by The Informal Sector 3

1.1.2 The National Hospital Insurance Fund 4

1.2 Problem Statement 5

1.3 Research Objectives 6

1.3.1 General Objective 6

1.3.2 Specific Objectives 6

1.4 Research Questions 7

1.5 Scope of the Study 7

1.6 Significance of the Study 7

1.7 Chapter Summary 8

CHAPTER TWO: LITERATURE REVIEW **9**

2.1 Introduction 9

2.2 Theoretical Foundations of the Study 9

2.2.1 Rational Choice Theory 9

2.2.2 The Nudge Theory 10

2.3 Empirical Literature 12

2.3.1 Mass Education Campaign and Uptake and Retention of NHIF 12

UT OMNES VNVM SINT

2.3.2 Demographic Factors and Uptake and Retention of NHIF 13
2.3.3 Socio Economic Status and Uptake and Retention of NHIF 14
2.3.4 Quality of Service and Uptake and Retention of NHIF 15
2.4 Summary of Knowledge Gaps 17
2.5 Conceptual Framework 21
2.6 Conceptualization 22
2.6.1 Mass Education Campaigns 22
2.6.2 Demographic Factors 23
2.6.3 Socio Economic Status 23
2.6.4 Quality of Service 24
2.7 Operationalization and Measurement of Variables 25
2.8 Chapter Summary 26
CHAPTER 3: RESEARCH METHODOLOGY 27
3.1 Introduction 27
3.2 Research Philosophy 27
3.3 Research Design 27
3.4 Population of the Study 28
3.5 Sampling Technique 28
3.6 Data Collection 29
3.7 Research Quality 30
3.7.1 Reliability of Instruments 30
3.7.2 Validity of Instruments 31
3.8 Data Analysis 31
3.9 Ethical Considerations 32
3.10 Chapter Summary 32
CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS 33

VT OMNES VNVM SINT

4.1 Introduction....33
4.2 Response Rate....33
4.3 General Information....33
4.4 Mass Education Campaigns and Uptake and Retention of NHIF....34
4.4.1 Descriptive Statistics....34
4.4.2 Inferential Statistics....36
4.5 Demographic Factors on Uptake and Retention of NHIF....37
4.5.1 Descriptive Statistics....37
4.5.2 Inferential Statistics of Demographic Factors....40
4.6 Socio Economic Status on Uptake and Retention of NHIF....41
4.6.1 Descriptive Statistics....41
4.6.2 Inferential Statistics of Socio-Economic Status....44
4.7 Quality of Service on Uptake and Retention of NHIF....45
4.7.1 Descriptive Statistics....45
4.7.2 Inferential Statistics....46
4.8 Uptake and Retention of NHIF....47
4.8.1 Descriptive Statistics....47
4.9 Overall Relationship....48
4.10 Chapter Summary....49
CHAPTER FIVE: DISCUSSIONS, CONCLUSION, AND RECOMMENDATIONS....50
5.1 Introduction....50
5.2 Discussions of Findings....50
5.2.1 Mass Education Campaigns and Uptake and Retention of NHIF....50
5.2.2 Demographic Factors and Uptake and Retention of NHIF....51
5.2.3 Socio Economic Status and Uptake and Retention of NHIF....51
5.2.4 Quality of Service and Uptake and Retention of NHIF....52
VT OMNES VNVM SINT

5.3 Conclusions 52

5.4 Recommendations 53

5.4.1 Policy Recommendations 53

5.4.2 Managerial Recommendations 54

5.4.3 Theoretical Contributions 54

5.5 Limitations of the Study and Suggestions for Further Research 54

APPENDICES 60

Appendix 1: Letter of Introduction 60

Appendix II: NACOSTI Letter 61

Appendix II: Questionnaire 62

VT OMNES VNVM SINT

LIST OF TABLES

Table 2.1: Summary of Knowledge Gaps 17

Table 2.2: Operationalization and Measurement of Variables 25

Table 3.3: Population of the Study 28

Table 3.4: Sample Size 29

Table 3.5: Reliability Analysis Results 30

Table 4.6: Education campaign conducted by NHIF 34

Table 4.7: Statements on Mass Education Campaign 35

Table 4.8: Regression Between Mass Education Campaigns and Uptake and Retention of NHIF 36

Table 4.9: Respondents' Age Bracket 38

Table 4.10: Marital Status 38

Table 4.11: Statements on Demographic Factors 39

Table 4.12: Regression between Demographic Factors and Uptake and Retention of NHIF 40

Table 4.13: Highest level of Education 41

Table 4.14: Level of Monthly Income 42

Table 4.15: Sufficiency of Income to Ensure Continuity Of Enrollement in NHIF 42

Table 4.16: Effect of Socio Economic Status on Uptake and Retention of NHIF 43

Table 4.17: Regression Between Socio Economic Status and Uptake and Retention of NHIF 44

Table 4.18: Effect of Quality of Service on Uptake and Retention of NHIF 45

Table 4.19: Regression Between Quality of Service and Uptake and Retention of NHIF 46

Table 4.20: Statements on Uptake and Retention of NHIF 47

Table 4.21: Regression of the Factors Influencing Uptake and Retention of NHIF 48

LIST OF FIGURES

Figure 2.1: Conceptual Framework 22

Figure 4.2: Period of Enrolment in NHIF..33

Figure 4.3: Gender of the Respondents...37

LIST OF ABBREVIATIONS

CIDP :	County Integrated Development plans
CDF :	County Development Fund
GOK :	Government of Kenya
KNBS :	Kenya National bureau of Statistics
LMIC :	Low- and middle-income countries
MoH :	Ministry of Health
NG-CDF:	National Government County Development Fund
NHIF :	National Health Insurance Fund
OOP :	Out of Pocket
SDG :	Sustainable Development Goals
SHI :	Social health insurance
UHC :	Universal health coverage
UN :	United Nations
WHO :	World Health Organization

DEFINITION OF KEY WORDS

Demographic Factors: These are factors that are used to define the characteristics of a person or a population such as race, age, gender and marital status and which may have an impact on NHIF uptake (Mhere, 2013).

Informal Sector: This consist of units engaged in the production of goods and services which typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale with nonexistence contractual or labour relations (Oxfam, 2013).

Mass Education Campaigns: A form of adult education practice in which methods of large-scale social mobilisation are used to engage the whole society in the process of reducing the incidence of illiteracy in the nation or the region of the campaign and which may have an impact on NHIF uptake (Mathauer 2008).

NHIF Uptake and Retention: The number of people who use a service or accept an intervention that is offered and continue using it in the near future where in this study is the NHIF scheme (NHIF 2012).

Quality of Service: The quality of service refers to a service provider's ability to ensure customer satisfaction through the provision of efficient performance so as to contribute to and which may have an impact on NHIF uptake (Fenny et al., 2016).

Socio Economic Status: Socio economic status refers to an individual's characteristics that relate to earnings such as wages and salaries, income, wealth and occupational prestige and which may have an impact on NHIF uptake (Bowles & Gintis, 2001).

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Background Information

According to estimates from World Health Organization (WHO) 100 million people become destitute each year due to the cost of healthcare, and 400 million people worldwide lack access to at least one basic health treatment (WHO, 2015). Hence the global call for countries to reform their health systems to achieve universal health coverage (UHC). The purpose of UHC is to ensure that everyone has access to high-quality healthcare services without fear of financial ruin or hardship (WHO, 2015). Because of this commitment, UHC was included in the Sustainable Development Goals (SDGs), which were approved by UN member states in 2015 to identify global development priorities over a fifteen-year period.

Low- and middle-income countries (LMICs) are progressively prioritizing UHC (Sachs, 2012), as it is anticipated that achieving UHC will result in a slew of benefits for both individuals and countries regarding health, economics, and politics.To reorient health systems towards UHC, countries have implemented initiatives to reform their health financing strategies including the development of systems to pool resources, moving away from Out-of-Pocket (OOP) payments. The funds are raised as revenue either from taxes or member contributions and the accumulated funds are then used to provide health services to all who are covered (WHO, 2010). This means governments need to maximize on enrolling all beneficiaries who can pay and be left to only finance those who cannot contribute to the pool.

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For myriad reasons, international evidence has demonstrated that achieving high coverage among the informal sector through a voluntary, contributory system for social health protection is difficult (Lagomarsino, Garabrant & Adyas 2012; McIntyre, Ranson & Aulakh 2013). One, compared to formal sector workers, a large majority of informal workers are poorer, and hence have a reduced ability to pay for health insurance (Alkenbrack, Jacobs & Lindelow 2013; Oxfam, 2013). Two, because the informal sector is not structured into large groupings, recruiting, registering, and collecting monthly contributions in a cost-effective manner is administratively problematic. As a result, membership and premium payment are frequently voluntary, resulting in low adoption, low retention, and adverse selection (Jowett & Kutzin 2015; Lagomarsino et al., 2012).

Three, the salaries of informal sector workers are often uncertain (Lagomarsino et al., 2012), making it harder to collect premiums on a consistent basis thus increasing attrition rates among this group. Even in nations that continue to try to collect voluntary insurance contributions, they account for a small percentage of overall health income (Jowett, et al. 2015; McIntyre et al., 2017) (as cited in Barasa, Mwaura, Rogo & Adrawes 2017). Thailand, for example, made poor progress toward universal coverage for many years until the government chose to use tax dollars to pay premiums for informal sector insurance (Tangcharoensathien, et al, 2010).

In sub-Saharan Africa, countries categorized as LMIC's have more than 90% of its people who are unable to seek appropriate care and thus suffer the risk of severe illness, early death and financial catastrophe linked to high OOP health expenditures which are especially high among the poorest people (Durairaj, D'Almeida & Kirigia 2010). Most of them fall under the informal sector of the economy. The informal economy can be broadly defined as comprising all workers – both wage-earners and self-employed – who operate micro-businesses that are not registered, keep no formal accounts, and are not covered by social protection (RNSF 2017). The paper further highlights 4 approaches to ensuring social protection to the informal sector as; (i) Contributory social insurance such as health and pensions; (ii) Non-contributory social assistance such as conditional and non-conditional cash transfers; (iii) Labour market measures, such as skills promotion and labour-intensive public works and technical vocational education and skills training; and (iv) Traditional safety nets provided by families and communities – such as care for relatives and neighbours (RNSF 2017).

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The Kenyan Constitution declares that everyone has the right to the best health possible, while enshrining a system of devolved government to ensure improved service delivery, greater accountability, improved public participation and equity in the distribution of resources (Ministry of Health 2018). Regarding financing, Kenya has adopted a mixed approach to finance healthcare and improve financial protection for her citizens. This approach is informed by the Bismarck model of social health insurance where the national insurer is the National Health Insurance Fund (NHIF) and other insurances being private insurance firms and community-based insurance schemes. The NHIF Act of 1998 mandates all workers employed in the formal sector to contribute to the scheme, while giving room to accommodate workers in the informal sector and retirees to contribute to the scheme voluntarily (NHIF 2012).

Kenya continues to fall behind in terms of shielding its population from the financial risks connected with poor health and the use of healthcare. According to a survey by Salari (2018), 7.1% of Kenyan households had to pay for catastrophic health care in 2018. While the percentage of families affected by health payments has decreased since 2003, health-care reforms introduced in the last five years (2013–2018) have failed to prevent households from incurring catastrophic and impoverishing health-care costs (Salari 2018). To address this issue, Kenya's government launched a massive reform initiative (the Big 4 Agenda) in 2018, pledging to provide universal health coverage to the whole Kenyan population by 2022. This economic blueprint is meant to foster economic development and provide solutions to various socio-economic challenges facing the country with its main target being manufacturing, food security, housing and UHC, with a hope of taking Kenya closer to achieving its Vision 2030 goals.

1.1.1 Uptake and Retention of NHIF by The Informal Sector

Most low-income workers are involved in informal work which is defined by International Labour Organization (ILO), as any economic activity undertaken by workers with profitable units that are not legally or sufficiently recognized by formal arrangements (ILO, 2012). Their general characteristics and patterns are lack of entitlements such as pension, unfair dismissal, lack of critical allowances such as leave and health insurance, lack of industry regulations leading to an unhealthy environment and finally, poor pay. However, this segment is very critical as there is evidence that to a very large extent, the informal sector cushions its workforce against abject poverty. Informal sector workers in Kenya consist mainly of small business owners like retailers, hawkers, boda boda operators and other service providers excluding drug traffickers and any other illegal activity (Kenya National Bureau of Statistics, 2015).

Attainment of UHC requires that the countries expand the range of Health services, expand population coverage with a pre-payment mechanism, and reduce the proportion of direct costs to citizens for access to healthcare services (Chan, 2016). Increasing access to health care for the informal sector and the poor should be an important objective of the Kenyan health sector strategy. Several players in the health insurance industry, including the national insurer (NHIF) and community-based health insurance schemes (CBHIs), have come up with products which accommodate informal sector workers. For instance, NHIF

introduced an enhanced cover to include outpatient services in 2015 as well as the Super Cover specifically targeting informal sector workers.

County governments too have over the years stepped up their social protection mandate for their residents in various ways including offering healthcare financing. Funding for such programs is catered for under their budget plans, use of contributory programs and allocating a portion of the National Government Constituency Development Fund (NG-CDF) grant by the National Government. Other counties too have actively engaged their residents by conducting enrolment campaigns to NHIF among offering other alternative options for their residents with an aim to achieve UHC. They have done so through setting up policy frameworks through their County Integrated Development plans (CIDPs) to implement strategies to encourage enrolment and retention for the informal economy.

1.1.2 The National Hospital Insurance Fund

The National Hospital Insurance Fund (NHIF) is a public institution that was established in 1966 to provide mandatory health insurance to formal sector employees, and its mandate later expanded to cover informal sector workers in 1998. The NHIF is Kenya's main health insurance provider, covering 88.4 percent of the country's insured population (MoH 2013). Since its inception in 1966, the Scheme has nearly universally covered the formal sector of the country, while informal sector coverage has remained low at 18.9% (Kenya National Bureau of Standards 2019). According to the Kenya Economic Survey done in 2019, the informal sector accounts for 83.6% (14.9 million workers) of the total employment in Kenya in 2018 (KNBS 2019). This statistic is impossible to ignore as it shows the huge size of the informal economy. The NHIF's limited coverage of informal sector workers, along with the low premiums paid per worker, indicates Kenya's lack of comprehensive social protection in health.

NHIF has since then played a critical role in delivering UHC for Kenya as its strategic plan 2018-2022 recognized an opportunity in partnering with County Governments to provide an enabling environment through review of the necessary legislations, policies, improving the health infrastructure and financing (sponsorship) of indigents (NHIF 2018). The plan further outlined 4 key initiatives that were to be conducted in the first year of implementation as; (i) Creation of awareness and educate county governments on the need to contribute to cover the poor and informal sector populations through NHIF; (ii) Develop and implement partnership with county governments to expand coverage for the informal

sector and indigents; and (iii) Identify groups for full/partial subsidy and engage Government, CDF, and partners. This was done as reported in the NHIF Operations & Quality Assurance Directorate 2019/20 Financial year performance report.

1.2 Problem Statement

Health insurance schemes are often hailed as key to enhancing universal health coverage which is part of the Sustainable Development Goals (SDGs). The World Health Organization (2016) reports that 43% of Kenyans cannot afford insurance since their daily spend often rarely exceeds one dollar. The current health insurance uptake in Kenya still lags behind most other developing countries as the data indicates that health insurance uptake has mainly been limited to the middle-class and upper-class citizens within the country (KNBS, 2019). The informal sector, and particularly in developing countries, is characterized by low and non-regular, non-taxed incomes, insecure employment, and self-employment without social security (Mukhwana, Ngaira & Mutai, 2015). As the Kenyan government makes inroads to accelerate achievement of universal health coverage, the informal sector workers must be considered since most are not covered by health insurance programs (Muiya, 2019). This is because most of them live below the poverty line and uptake of health insurance has become a luxury to many and the low uptake of insurance has resulted in limited access to healthcare (Muiya, 2019).

As at the 2020/21 Financial Year, NHIF reported to have registered a cumulative of 8,230,087 principal members under the informal sector, a combination of the Micro Insurance sector and Sponsored Programs (NHIF 2021). NHIF and County Governments have implemented strategies to enhance uptake and retention of NHIF insurance. Laikipia County Government emphasized on two strategies in its 2018-2022 CIDP i.e., premium subsidization for indigents, mass education and enrolment campaigns (Laikipia County, 2018). Tharaka Nithi County in its CIDP for 2018-2022 outlines creation of awareness on the importance of taking up the NHIF cover and setting up of the TN-Care programme that supports contribution financing to the vulnerable populations (Tharaka Nithi County 2018). However, analysis of contribution trends for the informal sector showed lack of consistency in premiums contributions, low retention which stood at 24%, adverse selection, high utilization that all point to unsustainability of this sector and the Fund as a whole (NHIF 2021). Despite the trends in collection of revenue and pay-out having a steady increase over the years due to the expanded revenue sources and increased membership, studies have

identified NHIF's constant challenge with enrolment and retention of the informal sector members (NHIF, 2016; Ariga, 2018; Barasa et al., 2017; Wanjiru et al., 2019).

There also exist gaps regarding knowledge about the factors influencing uptake and retention of NHIF by the informal sector. Fenny et al. (2016) studied factors contributing to low uptake and renewal of health insurance in Ghana and found out sociocultural factors and system-wide factors as impediments to enrolment. The study was however regional in context and its focus was limited to impediments to enrolment and was not in the informal sector context. Mbau et al. (2020) examined purchasing reforms towards UHC coverage by NHIF in Kenya and noted weaknesses in the reforms' design and implementation limited NHIF's purchasing actions with negative implications for the health system goals of equity, efficiency and quality. However, a contextual and conceptual gap exists as the study focus was reforms towards UHC by NHIF and not on the factors influencing uptake and retention of NHIF by the informal sector. Following the above findings that differ in context, this study seeks to determine the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

1.3 Research Objectives

1.3.1 General Objective

The main objective of the study was to determine the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

1.3.2 Specific Objectives

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The specific objectives of the study are to:

i. To examine the effect of mass education campaigns on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.
ii. To evaluate the effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.
iii. To determine the effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.
iv. To determine the effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

1.4 Research Questions

i. What is the effect of mass education campaigns on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties?
ii. To what extent does demographic factors affect on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties?
iii. What is the effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties?
iv. To what extent does quality of service affect uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties?

1.5 Scope of the Study

This study focused on the impact of the strategies that the two counties selected for the study as an influencer while also looking at the other factors that may have led to their uptake and retention i.e., demographics, socio-economic factors and quality of healthcare services, This is being done in Tharaka Nithi and Laikipia Counties, on how these factors influence enrolment and retention to NHIF among their informal sector members. The informal sector was chosen as it accounts for 83.6% (14.9 million workers) of the total employment in Kenya in 2018 (KNBS 2019). The target population selected in this study was the members of the informal sector in Tharaka Nithi and Laikipia Counties that are enrolled with NHIF as they had similar strategies in their policy documents. According to Tharaka Nithi Community Health Strategy plan there are 11,894 informal workers registered with NHIF while Laikipia Community Health Strategy plan indicates 13,246 informal workers registered with NHIF. Tharaka Nithi and Laikipia were chosen because they employed similar strategies to enhance NHIF enrolment with the same range of enrolled informal sector workers enrolled to NHIF.

1.6 Significance of the Study

The policy makers may benefit from the findings of the study in that it may be able to formulate effective strategies for enhancing uptake of NHIF insurance to the informal sector workers. Through having in place good policies for enhancing insurance uptake, the informal sectors workers will benefit as they may appreciate and understand the benefits of enrolling in NHIF.

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The managers at NHIF may benefit from the study as they may appreciate the importance of having informal sectors enrolled in NHIF due to their value contribution to the economy. Thus, they may be able to increase the resources allocated to ensure that there are education campaign targeted to educating informal sector workers on importance of enrolling in NHIF.

The research may add value to the Rational Choice theory and Nudge theory. The core premise of Rational Choice theory is that aggregate social behaviour is the product of the actions of individual actors, each of whom makes their own decisions. The Nudge theory argues that nudging can be used as a strategy to alter peoples' behaviour in a particular direction that will make their lives better without forcing them.

The study may contribute to the body of knowledge and understanding on the factors influencing uptake and retention of NHIF by the informal sector. The future researchers and scholars may benefit in that they may be able to increase their understanding of the pertinent issues concerning uptake and retention of NHIF.

1.7 Chapter Summary

The chapter focuses on the background to the study which has been discussed in regard to the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The chapter has discussed the problem statements and research objectives which include the effect of mass education campaigns, demographic factors, socio economic status and quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The chapter also includes research questions, scope of the study and significance of the study.

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CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section discusses the rational choice and nudge theories and shows how this can be used to influence people's behaviour in a particular direction. Also discussed are reflections from various literature on strategies used to ensure there is uptake and retention to social health insurance schemes.

2.2 Theoretical Foundations of the Study

2.2.1 Rational Choice Theory

The Rational Choice theory is a theoretical framework for analysing and modelling social behaviour (Abel, 1991). The core premise of Rational Choice theory is that aggregate social behaviour is the product of the actions of individual actors, each of whom makes their own decisions. As a result, the theory concentrates on the factors that influence individual decision-making (Lawrence & Easley, 2008). Rational choice theory assumes that individuals, or rational actors, try to actively maximize their advantage in any situation and, therefore, consistently try to minimize their losses. In rational choice theories, individuals are seen as motivated by the wants or goals that express their preference. They act within specific, given constraints and on the basis of the information that they have about the conditions under which they are acting (Blossfeld & Prein, 2019).

This theory is a framework used to understand decision-making based on individuals' rationality and self-interest. When applied to the uptake and retention of health insurance, rational choice theory suggests that individuals will weigh the costs and benefits of obtaining and keeping health insurance coverage (Richardson, 2020). In the context of uptake, individuals will assess factors such as the cost of premiums, deductibles, and copayments, as well as the perceived benefits of having insurance, such as access to healthcare services and financial protection against high medical expenses. They will compare these costs and benefits to determine whether obtaining health insurance aligns with their self-interest and economic rationality (Richardson, 2020). Similarly, when considering the retention of health insurance, individuals will evaluate factors such as changes in premiums, changes in coverage, and changes in their health status. They will weigh the costs of maintaining insurance against the potential benefits and adjust their

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decision accordingly. Under rational choice theory, individuals are expected to make decisions that maximize their utility or well-being (Saxon & Snow, 2020).

An argument against rational choice theory is that most people follow social norms, even when they are not benefiting from adhering to them. Also, some critics say that rational choice theory doesn't account for choices that are made due to situational factors or that are context dependent. Factors like emotional state, social context, environmental factors and the way choices are posed to the individual may result in decisions that don't align with rational choice theory assumptions (Herfeld, 2022). Some critics also state that rational choice theory doesn't account for individuals who make decisions based on fixed learning rules, in that they do things because that's the way they've learned to do them even when the decision has higher costs and fewer benefits (Dietrich & List, 2013).

The rational choice theory suggests that individuals make rational decisions based on their personal objectives and use calculated reasoning to achieve outcomes that align with those objectives. In this study, the rational choice theory will be relevant in explaining how individuals make decisions regarding the uptake of NHIF, and it will help determine the factors that influence the uptake and retention of health insurance among the informal sector in Tharaka Nithi and Laikipia Counties. By understanding these factors, the study will shed light on the reasons behind the uptake or non-uptake of NHIF and provide insights into how the system can be improved to better serve the needs of this population.

2.2.2 The Nudge Theory

The Nudge theory is proposed by two economists Thaler and Sustein (2009) where it argues that nudging can be used as a strategy to alter peoples' behaviour in a particular direction that will make their lives better without forcing them. They consider a nudge to be 'any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives' Thaler, et al (2009). The theory's central premise is that people frequently behave in a way that the economic theory finds difficult to predict. This originates from Herbert Simon on bounded rationality theory which argues that people are unable to make economically optimal decisions because they lack the capacity to store the voluminous information needed for such decisions, as well as the cognitive ability to process that information. Simon, 1945 as cited by Thaler, et al (2009).

When a government introduces policies that their implementation may be hindered by the drawbacks of human beings' cognitive biases, it is important that they also come up with strategies as to how these policies will be implemented seamlessly. Hence the Nudge theory has been used world over by governments implementing policy interventions, among them the UK, so much that some critical scholars already talk of a 'nudgeocracy' (Whitehead, Rhys, Pykett and Welsh, (2012). The US under the leadership of the Obama administration also employed nudge approaches in an array of areas 'from healthcare and financial reform to healthy eating and energy efficiency' (Halpern, 2016), and behavioural thinking became embedded in the affordable care act, financial law reform, climate change policy, and consumer protection policy (Halpern, 2015).

When applied to the uptake and retention of health insurance, nudge theory suggests using subtle and positive reinforcements to encourage individuals to make decisions that align with their long-term well-being. In the context of uptake, nudge theory can be used to facilitate the enrollment process and increase awareness of the benefits of health insurance (Cai, 2020). Regarding retention, nudge theory interventions can focus on reducing decision inertia and prompting individuals to maintain their health insurance coverage. Providing personalized information about the benefits they have received from their insurance plan, such as preventive services or financial protection, can also reinforce the value of maintaining coverage. Nudge theory interventions aim to improve uptake and encourage individuals to keep their coverage (Trafford & De la Hunty, 2021).

Harlpen also analysed the use of the nudge theory in the UK in a time when they were implementing policy interventions on pension programs. The new policy required employers to automatically enrol workers into the programme, while enabling them to opt out if they so wished. By changing the default options in this way, Halpern argues, the pension reforms mobilised the behavioural principle of inertia (that people have a 'strong tendency to go along with the status quo or default option') to nudge people into 'more prudent' retirement savings habits without ever removing their freedom of choice (Thaler, et al, 2009).

The theory will be relevant in this study since in health care settings, nudges can be used to improve patient outcomes and health care delivery. This is because when an individual's attention is drawn towards a particular option, that option will become more relevant to the individual and they will be more likely to choose that option and in this case uptake of health insurance. This will enable the individuals make choices on uptake of health

insurance so as to enhance their healthcare safety. Thus, the theory will help in determining the effects of mass education campaigns as a nudge strategy on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

2.3 Empirical Literature

In this section, the various strategies used globally and locally to ensure uptake and retention to social health insurance schemes will be discussed.

2.3.1 Mass Education Campaign and Uptake and Retention of NHIF

A study on "*extending voluntary health insurance to the informal sector: Experiences and expectations of the informal sector in Kenya" by* Barasa et al. (2017) supports the above findings as they showed that the Both purchaser (NHIF) and provider (healthcare facilities) characteristics influenced enrolment and retention of informal sector members in the NHIF. One of the major factors, according to the survey, is a lack of communication and information sharing between the NHIF and the general population. The public was not effectively informed on how to join the NHIF, how to access services as an NHIF member, or what their rights were as NHIF members, according to the report. While the NHIF had previously engaged in marketing campaigns, it was likely that the media used, such as billboard commercials, road shows, television, and radio, were not reaching informal sector employees in remote areas, who were unlikely to have access to these channels of communication.

Kariuki, Mavole and Okuku (2018) studied determinants of NHIF enrollment by self-employed residents of Nyeri County, Kenya. Data was collected from a sample of 306 respondents using questionnaires and thereafter analyzed using SPSS software to generate frequency distributions and measures of central tendency such as mean and standard deviation. From the study results the level of awareness on registration procedures, level of premiums and premium payment mechanism and benefit packages was below 50%. This clearly shows that the results on awareness on NHIF showed that the respondents had insufficient information on how to register, how to pay premiums and how they were to benefit if they enrolled. Awareness of registration and the benefits arising are crucial in ensuring uptake of health insurance.

Maina (2019) studied factors influencing health insurance uptake in Nyeri County. The probit model was applied to analyze the factors influencing residents of Nyeri County

decision to purchase health insurance or not. The study analyzed cross sectional data collected in Nyeri Level V Hospital in the month of October 2019. The study observed awareness to be a significant predictor of health insurance uptake in Nyeri County. Low financial literacy in Nyeri County may be attributable to reliance on speculation for information regarding insurance. This demonstrates information asymmetry regarding the health insurance market in Nyeri County between the insured and insurers. There is a need for insurance literacy campaigns conducted that are both general and product specific for both insured and uninsured to give the populace a positive view of the benefits.

2.3.2 Demographic Factors and Uptake and Retention of NHIF

Alesane and Anang (2018) studied uptake of health insurance by the rural poor in Ghana. Empirical evidence of factors restraining enrollment is rare in many developing countries including Ghana was conducted. A logit model was used to analyze data from 178 respondents randomly selected from two microfinance groups operating in the study area. The results indicate that insurance uptake is higher among younger people, but lower among women. Older women are however more likely to take up health insurance compared to older men. In addition, the study reveals that insurance uptake increases with level of education but decreases with household size. Even though the premium on health insurance coverage in Ghana is arguably low, socio-demographic characteristics such as age, sex, literacy level and household size affect the decision to enroll.

Kariuki, Mavole and Okuku (2018) studied determinants of NHIF enrollment by self-employed residents of Nyeri County, Kenya. Data was collected from a sample of 306 respondents using questionnaires and thereafter analyzed using SPSS software to generate frequency distributions and measures of central tendency such as mean and standard deviation. Age was one of the demographic factors that determined NHIF enrolment. The study found out that the respondents in the age category between 36-45 years had the highest enrolment to NHIF scheme as compared to the rest. This is best explained by the fact that as one advances in age, he or she should be encouraged to enroll to the NHIF scheme. This will go a long way in ensuring that they are covered in terms of their wellbeing because they are more prone to health problems.

Malicha (2020) studied factors influencing uptake of NHIF among members of Moyale Constituency, Kenya. The study adopted a cross-sectional study design incorporating mixed methods. The study used stratified systematic sampling techniques and a

questionnaire was used to collect data. Quantitative data was analyzed using descriptive statistics and regression analysis and the findings was presented in multiple linear regression model while qualitative data was analyzed thematically. It was established that demographic factors influence the uptake of NHIF as with increased age, people may be more inclined to take charge of improving the welfare of their family members. This is because older respondents are more likely to be married and have children and other dependants who require medical care and therefore more ready to agree to enroll in the insurance scheme that would facilitate access quality healthcare.

2.3.3 Socio Economic Status and Uptake and Retention of NHIF

Robert and Rebbeca (2017) in their study on enrollment of minorities, part-time workers, and those employed in small firms in the United States found that coverage was influenced by employment status, and size of the employer. Those who were employed were 78.5% likely to be insured compared to 61.7% who were not in the labor force. Those who remained unemployed for over one year, in part-time work and those working in small firms of less than 10 employees were less likely to have health insurance. Furthermore, 20.7% of those who moved from government employment to become self-employed lost their health insurance. The researchers concluded that job loss and movement to small employers were critical factors in explaining loss of health insurance in an economy dominated by employer-sponsored insurance.

In exploring the social economic status and health insurance in Ghana, Sarpong (2018) used proxy measurements of well-being such as water supply, access to electricity, nature of dwelling to classify households as low, intermediate, and high socio-economic status. The findings were: only 21% of poor households were enrolled compared to 60% who were classified as belonging to high socio-economic status. The researchers however acknowledged that the Government of Ghana had recognized the disparities in health Insurance and healthcare and set the subscription fees depending on people's ability to pay.

Kariuki, Mavole and Okuku (2018) studied socio-economic determinants of NHIF enrollment by self-employed residents of Nyeri County, Kenya. Data was collected from a sample of 306 respondents using questionnaires and thereafter analyzed using SPSS software to generate frequency distributions and measures of central tendency such as mean and standard deviation. It was revealed that disposable income plays a significant role in ensuring that one caters for basic needs such as food, clothing, shelter, and health. Having

regular income for the self-employed will ensure that they can pay for premiums to NHIF scheme.

Akute (2021) studied factors influencing voluntary NHIF enrolment and retention in Busia County. The study used a cross-sectional survey design and structured questionnaires to collect data. The collected data was analyzed quantitatively using SPSS version 20 and Minitab version 20. Economic status indicators such as household income, household size and standard of living did not limit enrollment to NHIF, however, their occupation limited their ability to voluntarily enroll with NHIF. However, having more dependents in a household can place a burden on its financial resources, making it challenging to afford the insurance premiums. The primary reason for this is that the occupation of the individuals in the household often requires them to live from paycheck to paycheck, which can make it difficult to enroll in NHIF.

2.3.4 Quality of Service and Uptake and Retention of NHIF

Adewole et al. (2022) studied factors influencing satisfaction with service delivery among National Health Insurance Scheme (NHIS) Enrollees in Ibadan, Southwest Nigeria. The study was a descriptive cross-sectional study conducted among enrollees in selected NHIS facilities in Ibadan, Nigeria. Data on satisfaction with health care were collected among selected 432 enrollees with the aid of an adapted semi-structured WHO-USAID interviewer-administered questionnaire. Data were analyzed using chi-square and multiple logistic regression models using STATA version 2.0 software and SPSS. Findings concluded that the quality of care in the NHIS accredited facilities was low and may have contributed to the low level of population coverage of the scheme. Stakeholders in the NHIS should thus implement policies that will enhance the health literacy of potential beneficiaries of the scheme as this will improve satisfaction with care among enrollees, facilitate uptake of and continuity with available care. It would assist in the attainment of UHC and improved population health for growth and development.

Fenny et al. (2016) studied factors contributing to low uptake and renewal of health insurance in Ghana. Minimally structured, qualitative interviews were conducted with key stakeholders at the district, regional and national levels. Focus group discussions were also undertaken at the community level. Using an inductive and content analytic approach, the transcripts were analyzed to identify and define categories that explain low uptake of health insurance. Due to attitudinal and systemic factors, there is a general perception among

community members that persons insured with the National Health Insurance Scheme (NHIS) do not receive quality healthcare when sick. This perception discourages people from enrolling with the NHIS. But from the perspective of the service providers, the situation is entirely different. They face constraints which undermine the quality of service they could provide to their clients. Delays in the reimbursement of claims by the NHIA greatly impedes their operations.

Tefera et al. (2021) studied the interaction of healthcare service quality and community-based health insurance in Ethiopia. A mixed-method comparative study was conducted in four agrarian regions of Ethiopia. Data was collected through facility assessments, client-exit interviews, and key informant interviews. In addition to manual thematic analysis of qualitative data, quantitative descriptive and inferential analyses were done using SPSS vs 25. The study found better diagnostic test capacity, availability of tracer drugs, provider interpersonal communication and service quality standards in Community-based health insurance (CBHI). A higher proportion of clients at CBHI health centers gave high ratings of overall satisfaction with services. Individual and household factors including family size, age, household health care-related expenditures, and educational status, played a more significant role in CBHI enrollment and renewal decisions than health service quality.

Akute (2021) studied factors influencing voluntary NHIF enrolment and retention in Busia County. The study used a cross-sectional survey design and structured questionnaires to collect data. The collected data was analyzed quantitatively using SPSS version 20 and Minitab version 20. The findings of the study regarding the impact of service quality on the retention of NHIF members who voluntarily enrolled indicate that most respondents disagreed with the statement that delayed payments by NHIF prompted them to opt for cash payments rather than wait for medication. The healthcare providers' practice of delaying payments in favor of larger, less frequent repayments has been favored by members, but this has negatively affected the uptake of NHIF services. Additionally, the NHIF reforms were inadequately communicated and were unaffordable for certain vulnerable populations, and there were also gaps in the infrastructure for service delivery.

2.4 Summary of Knowledge Gaps

Worldwide, in-depth research has been done on the determinants of uptake of voluntary social health insurance arrangements. Thus, this section sought to evaluate knowledge gaps in regard to the factors influencing uptake and retention of NHIF by the informal sector.

Table 2.1: Summary of Knowledge Gaps

Author	Topic	Findings	Research Gap
Barasa et al. (2017)	Extending voluntary health insurance to the informal sector: Experiences and expectations of the informal sector in Kenya	The public was not effectively informed on how to join the NHIF, how to access services as an NHIF member, or what their rights were as NHIF members. While NHIF had previously engaged in marketing campaigns, it was likely that the media used were not reaching informal sector employees	This study was limited to challenges regarding mass media campaigns and their effect on enrolment in NHIF while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Maina (2019)	Factors influencing health insurance uptake in Nyeri County	The study observed awareness to be a significant predictor of health insurance uptake in Nyeri County. Low financial literacy in Nyeri County may be attributable to reliance on speculation for information regarding insurance.	The study focus was limited to factors influencing health insurance uptake and the focus was in Nyeri County while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector

Alesane and Anang (2018)	Uptake of health insurance by the rural poor in Ghana	The results indicate that insurance uptake is higher among younger people, but lower among women. Older women are however more likely to take up health insurance compared to older men.	This study focus was on Ghana and its focus was on demographic factors and uptake of health insurance while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Malicha (2020)	Factors influencing uptake of NHIF among members of Moyale Constituency, Kenya	It was established that demographic factors influence the uptake of NHIF as with increased age, people may be more inclined to take charge of improving the welfare of their family members.	The study focus was limited to Moyale Constituency and was on demographic factors influencing uptake of NHIF while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Robert and Rebbeca (2017)	Enrollment of minorities, part-time workers, and those employed in small firms in the United States	Coverage was influenced by employment status, and size of the employer. Those who were employed were 78.5% likely to be insured compared to 61.7% who were not in the labor force	This study was in the global context and was limited to socio economic status and enrollment in health insurance while the current study focuses on factors influencing uptake and retention of

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			NHIF by the informal sector
Sarpong (2018)	Social economic status and health insurance in Ghana	Only 21% of poor households were enrolled compared to 60% who were classified as belonging to high socio-economic status	This study was in the regional context and was on Social economic status and enrollment in health insurance while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Kariuki, Mavole and Okuku (2018)	Socio-economic determinants of NHIF enrollment by self-employed residents of Nyeri County, Kenya	It was revealed that disposable income plays a major role in ensuring that one caters for basic needs such as food, clothing, shelter and health. Having regular income for the self-employed will ultimately ensure that they can pay for premiums to NHIF scheme.	The focus was on socio-economic determinants of NHIF enrollment while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Adewole et al. (2022)	factors influencing satisfaction with service delivery among NHIS Enrollees in Ibadan, Southwest Nigeria	Findings concluded that the quality of care in the NHIS accredited facilities was generally low and may have contributed to the low	This study looked at factors influencing satisfaction with service delivery among NHIS Enrollees in Nigeria while the

		level of population coverage of the scheme.	current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Fenny et al. (2016)	Factors contributing to low uptake and renewal of health insurance in Ghana	It was revealed that there is a general perception among community members that persons insured with NHIS do not receive quality healthcare when sick	The study focused factors contributing to low uptake and renewal of health insurance in Ghana while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Tefera et al. (2021)	The interaction of healthcare service quality and community-based health insurance in Ethiopia	Individual and household factors including family size, age, household health care-related expenditures, and educational status, played a more significant role in CBHI enrollment and renewal decisions than health service quality.	This study focus was on interaction of healthcare service quality and community-based health insurance in Ethiopia while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector
Akute (2021)	Factors influencing voluntary NHIF enrolment and	The results relating to the influence of quality of service on retention of individuals voluntarily	This study focus was on factors influencing voluntary NHIF enrolment and

	retention in Busia County	enrolled to the NHIF show that most respondent disagreed that the delay in NHIF to respond to medication payment has led them to opt for cash payment than delay in medication	retention in Busia County while the current study focuses on factors influencing uptake and retention of NHIF by the informal sector

2.5 Conceptual Framework

The conceptual framework provides the relationship that the researcher feels is present between the research variables. The independent variables are mass education campaigns, demographic factors, socio economic status and quality of service while the dependent variable is uptake and retention of NHIF.

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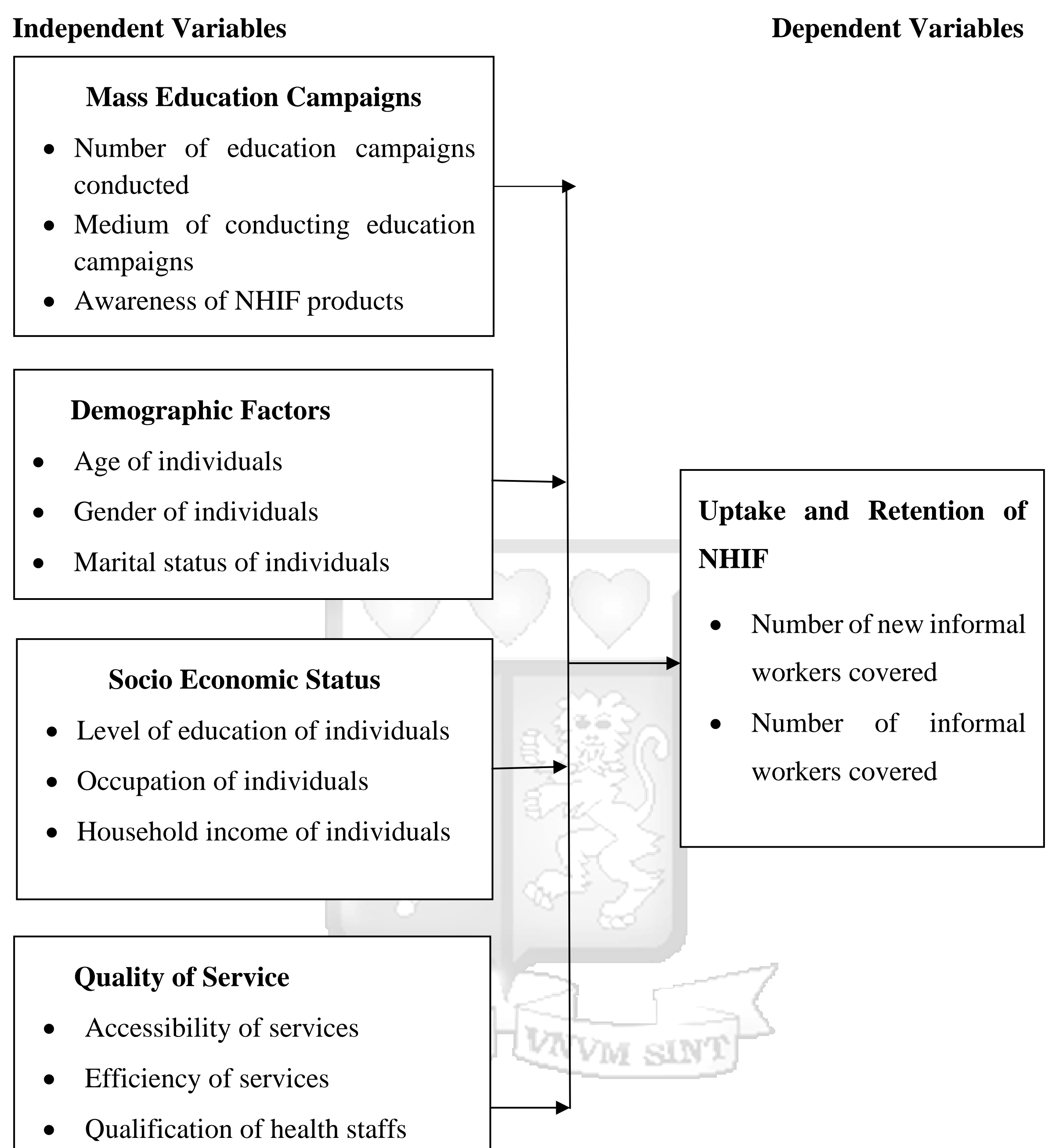

Figure 2.1: Conceptual Framework (Source: Author (2023)

2.6 Conceptualization

2.6.1 Mass Education Campaigns

Access to services from public and private health care facilities is not always achievable for the poor and informal sector workers. There are various factors that influence uptake and retention of NHIF by the informal sector. The first factor is mass education campaigns is a form of adult education practice in which methods of large-scale social mobilisation

are used to engage the whole society in the process of reducing the incidence of illiteracy in the nation or the region of the campaign. Mass education campaigns influence uptake of NHIF by the informal sector since the most critical barrier to NHIF enrollment was found out to be lack of knowledge of informal sector workers on its enrollment options and procedures (Mathauer 2008).

According to Muketha (2016) mass media campaigns enhances awareness which is a vital aspect to enhancing uptake and enrolment in NHIF. The value attached to insurance depends on comprehension of how it works, knowledge of the coverage nominally provided, and experience of the reimbursement effectively delivered. Provision of information is identified to be a promising strategy to increase the number of insured opting for a voluntary deductible in a study done on the potential determinants of deductible uptake in health insurance in the Netherlands (Van Winssen et al., 2016).

2.6.2 Demographic Factors

Demographic factors that influence NHIF uptake and retention include age, gender and marital status (Mhere, 2013). Age is a significant determinant of enrollment and retention of NHIF since as people aged, they had a better sense of responsibility, had more knowledge, and thus tend to take NHIF cover. This is because in advanced age there is decreased uptake of health insurance, suggesting that people past their productive years are not as cautious with their health or are rich enough to pay in cash. Some elderly individuals also have generations of children who take care of their health needs financially (Mhere, 2013).

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In the health sector, gender power relations translate into different access to and control over health resources within and outside families, unequal division of labor in the formal, informal, and home-based parts of the health care system. Also, women have a more positive outlook toward health insurance compared to men. Married people also tend to take up health insurance and the main reason behind this is that contributions paid are the same for everybody enrolled, even households that had up to 7 members (Alesane & Anang, 2018).

2.6.3 Socio Economic Status

Socio economic status of an individual such as level of education of individuals, occupation of individuals and household income of individuals influence uptake and retention of NHIF. Income is the most important social and economic determinant of health, since the level of

income determines overall living conditions, psychological functioning, and influences health related behavior such as food security, housing, participation in cultural and educational activities, which leads to effects to one's health and lessens the ability to live a fulfilling life. The level of education and occupation of individuals in the informal sector are linked with inadequate income maintenance and income generating activities that in turn reinforces poverty conditions thus limiting their uptake and retention of NHIF (Akute, 2021).

Most of the informal sector workers don't have formal education and this limits their employment level and household income which has an effect on uptake of NHIF cover. This is because as the incomes of informal sector workers fluctuate over time it makes it difficult for them to pay NHIF cover. Lack of access to credit and non-availability of inputs may impede access to markets and lead to informal sector businesses remaining small and remaining exposed to vulnerability and insecurity and this limits the household income of the individuals (Van Winssen et al., 2016).

2.6.4 Quality of Service

The quality of service refers to the ability to ensure there is customer satisfaction through the provision of efficient services by NHIF. Quality of services play a vital role in the uptake of health insurance products particularly the number of qualified health staff, their attitude, the presence of quality of utilities, the efficiency of the payment systems, and the quality and sufficiency of drugs (Fenny, Kusi, Arhinful & Asante, 2016). Quality of service in terms of accessibility of services, efficiency of services and qualification of the human resource for health influence uptake and retention of NHIF. This is because organizations are motivated to achieve success through the attainment of predetermined objectives including high quality of service. Quality of services play a vital role in the uptake of health insurance products particularly the number of qualified health staff, their attitude, the presence of quality of utilities, the efficiency of the payment systems, and the quality and sufficiency of drugs (Fenny et al., 2016).

2.7 Operationalization and Measurement of Variables

Table 2.2: Operationalization and Measurement of Variables

Variable	Indicators	Data Collection Tool	Data Analysis
Mass Education Campaigns	• Number of education campaigns conducted • Medium of conducting education campaigns • Awareness of NHIF products	Questionnaire in form 5-likert scale questions	Descriptive and inferential analysis
Demographic Factors	• Age of individuals • Gender of individuals • Marital status of individuals	Questionnaire in form of open ended and 5-likert scale questions	Descriptive and inferential analysis
Socio Economic Status	• Level of education of individuals • Occupation of individuals • Household income of individuals	Questionnaire in form of open ended and 5-likert scale questions	Descriptive and inferential analysis
Quality of Service	• Accessibility of services • Efficiency of services • Qualification of health staffs	Questionnaire in form of open ended and 5-likert scale questions	Descriptive and inferential analysis
Uptake and Retention of NHIF	• Number of new informal workers covered • Number of informal workers covered	Questionnaire in form of open ended and 5-likert scale questions	Descriptive and inferential analysis

Source: Researcher (2023)

2.8 Chapter Summary

The literature review began by looking at the theories that guided the study that included Rational Choice theory and Nudge theory. The core premise of Rational Choice theory is that aggregate social behaviour is the product of the actions of individual actors, each of whom makes their own decisions. The Nudge theory argues that nudging can be used as a strategy to alter peoples' behaviour in a particular direction that will make their lives better without forcing them. It was established that the value attached to insurance depends on comprehension of how it works, knowledge of the coverage nominally provided, and experience of the reimbursement effectively delivered. Demographic factors such as age of individuals, gender of individuals and marital status of individuals influence uptake and retention of NHIF.

Socio economic status of an individual such as level of education of individuals, occupation of individuals and household income of individuals influence uptake and retention of NHIF. Income is the most important social and economic determinant of health, since the level of income determines overall living conditions, psychological functioning, and influences health related behaviour such as food security, housing, participation in cultural and educational activities, which leads to effects to one's health and lessens the ability to live a fulfilling life. Quality of services play a vital role in the uptake of health insurance products particularly the number of qualified health staff, their attitude, the presence of quality of utilities, the efficiency of the payment systems, and the quality and sufficiency of drugs.

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CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methods that were employed to accomplish the study's goals. Further, sub-sections of this chapter present the research design, the study setting and population that was targeted, the sampling procedures, data collection and analysis methods and the ethical considerations.

3.2 Research Philosophy

Research philosophy relates to the development of knowledge and the nature of that knowledge (Saunders, Lewis & Thornhill 2012). There are two types of research philosophy in research that include positivism and social constructivism research philosophy. Positivism assumes in its understanding of the world that the environment and the events of interest are objective, external and independent of the researcher (Bryman & Bell, 2015). Social constructivism, however, assumes that the understanding of the environment and events in it are socially constructed and subjective from the researcher's point of view. Positivism relies on quantitative data that positivists believe is more reliable than qualitative research. Positivism believe quantitative research is more scientific in its methods than qualitative research and thus more trustworthy (Saunders, Lewis & Thornhill, 2012). The positivism research philosophy was thus appropriate for this study since the study is quantitative in nature. This was an appropriate philosophy in determining the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

3.3 Research Design

A quantitative descriptive research design was adopted as the study aims at establishing the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. A descriptive research design was employed which is a research method that describes the characteristics of the population or phenomenon studied. Descriptive research design focuses more on the what of the research subject than the why of the research subject (Saunders, Lewis & Thornhill, 2012). The descriptive design was applied because it gives a room for obtaining large data volume from a substantial population in an economical, effective, and efficient way by use of questionnaires (Saunders, Lewis & Thornhill, 2012). This technique was preferable because it allows the

analysis of a number of variables by the researcher at a go and by use of this technique, the research is capable of describing the various variables and conditions (Erik & Marko, 2011). The research design was applied in creating frequency distributions, percentages, and tables.

3.4 Population of the Study

Population refers to a full set of objects, cases or individuals that have some similar observable features, (Mugenda & Mugenda, 2012). The target Population is the specific population under research (Kothari, 2014). Kothari (2014) notes that the target population should be characterized by traits that can be observed and which helped the researcher generalize on the whole population. The informal sector was chosen as it accounts for 83.6% (14.9 million workers) of the total employment in Kenya in 2018 (KNBS 2019). The target population selected in this study was the members of the informal sector in Tharaka Nithi and Laikipia Counties that are enrolled with NHIF. According to Tharaka Nithi Community Health Strategy plan there are 11,894 informal workers registered with NHIF while Laikipia Community Health Strategy plan indicates 13,246 informal workers registered with NHIF.

Table 3.3: Population of the Study

Population Category	Population Frequency	Percentage
Tharaka Nithi County Informal Workers	11,894	47.3%
Laikipia County Informal Workers	13,246	52.7%
Total	**25,140**	**100.0%**

Source: *Counties Community Health Strategy plan*

3.5 Sampling Technique

According to Erik and Marko (2011) sampling is the process of selecting a number of individuals for a study in such a way that the individual represents a true representation of the group from which they are selected. A sample is a small group obtained from accessible population (Mugenda & Mugenda, 2012). Sampling method is the procedure a researcher uses to gather people, places, or things to study (Kombo & Tromp, 2014). Stratified random sampling technique was used since the population of interest is not homogeneous and could

be subdivided into groups or strata to obtain a representative sample. This method was used since it reduces the chances of bias, and all items have an equal chance of being selected.

The study used the Yamane (1967) formula to arrive at the sample size. The selection formula is as follows:

$n= (N/ (1+N (e)^2$

Where n= the required sample size

N = is the Target Population (25,140 employees)

e = accuracy level required. Standard error = 5%

$n=25,140/ (1+25,140 (0.05)^2$

n=25,140/63.85

n=394

A sample of 394 respondents was used.

Table 3.4: Sample Size

Population Category	Sample Size	Percentage
Tharaka Nithi County Informal Workers	186	47.3
Laikipia County Informal Workers	208	52.7
Total	**394**	**100.0**

Source: Researcher (2023)

3.6 Data Collection

Data collection enables the researcher to accumulate information about people, objects or a phenomenon and about the setting in which they occur and are essentially categorized into primary and secondary data collection methods (Cooper & Schindler, 2011). The researcher employed primary data which was collected through structured questionnaires that was closed ended. The close-ended questions were in the Likert scales because they are reliable and give increased data volumes as compared to the rest of the scales. The questionnaire contained background information of respondents as well as questions regarding the objectives of the study.

Protocol for data collection was followed attentively. The researcher first sought an approval from the University Ethics Board before research study begins. Thereafter, an approval was sought for collection of data from the National Commission for Science, Technology, and Innovation (NACOSTI) in Kenya, an agent of the Ministry of Education. Upon receiving the approvals, the researcher visited the Counties Directorate of Research for an approval to collect data in the respective counties. The research adopted a drop and pick technique in the data collection process.

3.7 Research Quality

The researcher observed research quality by ensuring that the techniques and reports used are reliable to produce consistent reports when used by other researchers. The researcher conducted a pilot study where 40 respondents were used as the pilot group, and they were not involved in the actual study.

3.7.1 Reliability of Instruments

Reliability is the measure of whether one gets a similar result using an instrument for measuring an item more than one time. A specific measure is considered to be reliable if its application on the same object of measurement number of times produces the same results (Bryman & Bell, 2015). Reliability is evaluated repeatedly through using a test–retest reliability approach of the Cronbach Alpha measure of internal consistency (Cooper & Shindler, 2011). For this study reliability was measured using Cronbach alpha. It tests internal consistency used to calculate correlation values among responses on an assessment tool. The 0.70 is the level acceptable that is the desirable reliability (Bell & Bryman, 2015).

Table 3.5: Reliability Analysis Results

Factor	Cronbach's Alpha	Comments
Mass education campaigns	0.802	Accepted
Demographic factors	0.771	Accepted
Socio economic status	0.756	Accepted
Quality of service	0.811	Accepted
Uptake and retention of NHIF	0.783	Accepted

After the test, all the alpha characteristics were more than 0.7 as shown in Table 3.5. Mass education campaigns had an alpha estimation of 0.802, demographic factors had Cronbach's alpha estimation of 0.771, socio-economic status had Cronbach's alpha1estimation of 0.756, quality of service had Cronbach's alpha1estimation of 0.811 while uptake and retention of NHIF had a Cronbach's alpha estimation of 0.783. This was an indication that there was consistency in responses in the questionnaire and thus the questionnaire was deemed to be reliable.

3.7.2 Validity of Instruments

According to Cooper and Shindler (2011) validity is the degree by which the sample of test items represents the content the test is designed to measure. There are seven key types of validity in research that include face validity, content validity, construct validity, internal validity, external validity, statistical conclusion validity and criterion-related validity. However, content validity was applied in this research which measures the level by which collected data by use of particular instruments mirrors a particular content or domain of specific concept. To achieve this, the questionnaire was proofread to ensure that there are no errors both typographical and in form. To determine the validity of the questionnaire, it was necessary to pretest it before using it. The pretesting of the research instruments ensured that the instruments are valid in that they are able to measure the concept(s) it is intended to measure.

3.8 Data Analysis

The collected data was in the quantitative form where descriptive and inferential statistics was used in analyzing the data quantitatively. The descriptive quantitative data presented in the study consisted of measures such as mean, standard deviation, frequency, and percentages. Inferential statistics in the form of multiple regression analysis was also used. Analysis of data was carried out by employing SPSS version 23 and the results are presented in form of tables.

A multivariate regression model was used in establishing the relationship amongst the studied factors. The regression model was as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

Y = Uptake and retention of NHIF

X_1= Mass education campaigns

X_2= Demographic factors

X_3= Socio economic status

X_4= Quality of service

$\beta 0$ = Constant Term; β_1, β_2, β_3 and β_4 = Beta coefficients which were employed for measuring dependent variable's sensitivity (Y) to a change in a unit of predictor variables.

ε = Error term

3.9 Ethical Considerations

The researcher sought the necessary approvals before the research begins where ethical clearance was sought from the University Ethical Review Board (ERB) and the National Commission for Science, Technology, and Innovation (NACOSTI). The research upheld the ethical rights of the respondents when administering the questionnaire. The respondents were assured that their identity and information provided remain confidential and would not be used against them. Anonymity was maintained whereby the researcher instructed the respondents that they need not indicate their identities in the given questionnaires. The researcher sought the consent of the respondents before administering the questionnaires to them and emphasized that responding to the questionnaire is voluntary. The respondents maintained the right to withdraw from the study at any point in the study.

3.10 Chapter Summary

This chapter presents the research methodology which was applied in analysis of questions of research. The study adopted a descriptive research design. The target population comprised of 11,894 informal workers from Tharaka Nithi County and 13,246 informal workers from Laikipia County registered with NHIF. The stratified random technique was used to obtain 394 respondents. The study used structured close ended questions to collect primary data. Analysis was done quantitatively by employing inferential and descriptive statistics. Presentation of data was done through frequencies, mean, standard deviation and percentages and presented in form of tables.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The chapter presents the research findings. The chapter begins with the response rate and the general information of the respondents. The descriptive and inferential findings of the study objectives are then presented.

4.2 Response Rate

The researcher distributed 394 questionnaires to the sampled respondents in the informal sector in Tharaka Nithi and Laikipia Counties. Out of the 394 questionnaires administered, 325 questionnaires were duly filled and returned representing a response rate of 84.3%. Out of the 325 questionnaires distributed, 148 were from Tharaka Nithi County while 177 were from Laikipia County. According to Kothari (2014), a response rate of 50% is considered satisfactory, while one of more than 70% is considered excellent. According to Mugenda & Mugenda (2012), a response rate of 50% is considered sufficient, a rate of 60% is considered excellent, and a rate of over 70% is considered very good. Based on this data, the study's response rate was sufficient.

4.3 General Information

The study sought to establish the period of enrolment in NHIF by the respondents. The findings are presented in Figure 4.2.

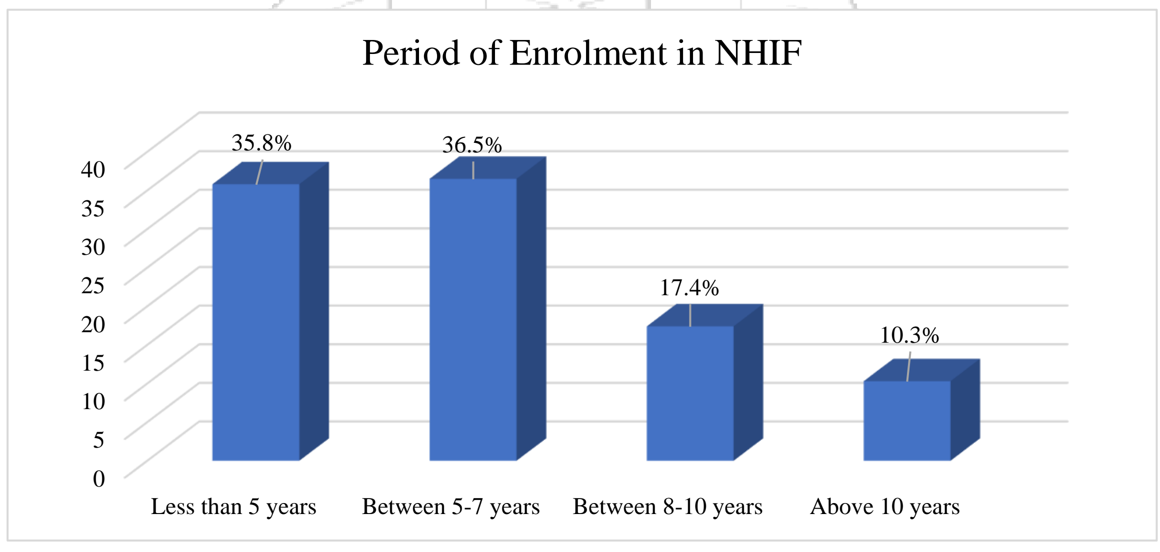

Figure 4.2: Period of Enrolment in NHIF

The findings show that 35.8% of the respondents had been enrolled in NHIF for less than 5 years, 36.5% had been enrolled in NHIF for 5-7 years, 17.4% for 8-10 years and 10.3% for over 10 years. The findings imply that the NHIF members from the informal sector who responded have been enrolled for a period that would enable them to adequately respond to the study question.

4.4 Mass Education Campaigns and Uptake and Retention of NHIF

4.4.1 Descriptive Statistics

The study requested the respondents to indicate whether there have been education campaigns conducted by NHIF on the importance of enrolment in their County.

Table 4.6: Education campaign conducted by NHIF

	Frequency	Percentage
Yes	316	97.2
No	9	2.8
Total	**325**	**100**

The majority of the respondents (97.2%) indicated that there has been education campaign conducted by NHIF on the importance of enrolment in their County. This implies that there has been education campaigns conducted by NHIF on the importance of enrolment in the Counties.

The study further requested the respondents to indicate their agreement when it comes to statements that relate to the effect of mass education campaign on the uptake and retention of NHIF.

Table 4.7: Statements on Mass Education Campaign

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
There has been awareness on the importance of NHIF enrolment because of education campaigns conducted in my County	8	14	53	204	46	3.81	0.82
There has been awareness of how to enrol to NHIF because people have been informed in my County	8	36	75	154	52	3.63	0.96
I am aware of the health benefits I will have after enrolling to NHIF	2	52	55	150	66	3.69	0.96
I am aware of NHIF services I can access and how to access them as a member	1	1	55	216	52	3.98	0.61
I am aware of the requirements needed to enrol in NHIF	2	1	58	140	124	4.18	0.77
NHIF communicates effectively on any information that is of help to the members	3	13	27	213	69	4.02	0.73
The advertisement made on the importance of NHIF made me enrol to the scheme	3	8	34	216	64	4.02	0.70

Most of the participants in the study expressed agreement that they were familiar with the necessary requirements for enrolling in NHIF, as evidenced by a mean score of 4.18, which falls within the agree range of 3.5 to 4.2. Furthermore, the standard deviation of 0.77 was less than 1, indicating a low level of response variance. The respondents agreed that the advertisement made on the importance of NHIF made them enrol to the scheme as shown by a mean of 4.02 which falls within the agree range of 3.5 to 4.2 and a standard deviation of 0.70 depicting a low variance in responses. The respondents further agreed that NHIF communicates effectively on any information that is of help to the members as shown by a mean of 4.02 which is in the range of agree between 3.5 to 4.2. With a standard deviation of 0.73 which is less than 1, the responses had low variance. The respondents also agreed that they are aware of NHIF services they can access and how to access them as a member

as shown by a mean of 3.98 and a standard deviation of 0.61 implying a low variance in the responses.

In addition, the respondents agreed that there has been awareness of the importance of NHIF enrolment because of education campaigns conducted in their county as shown by a mean of 3.81 which is in the range of agree between 3.5 to 4.2. The responses had a high standard deviation of 1.82 which is higher than 1 which shows a high response variance. The respondents also agreed that they are aware of the health benefits they will have after enrolling on NHIF as shown by a mean of 3.69. The responses had a low standard deviation of 0.96 which is less than 1 which shows a low response variance. The respondents agreed that there has been awareness of how to enrol to NHIF because people have been informed in their County as shown by a mean of 3.63 which is in the range of agree between 3.5 to 4.2. The responses had a high standard deviation of 0.96 which is higher than 1 which shows a high response variance.

4.4.2 Inferential Statistics

A simple linear regression analysis was conducted to test the effect of mass education campaigns on the uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The model summary is presented in Table 4.8.

Table 4.8: Regression Between Mass Education Campaigns and Uptake and Retention of NHIF

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599	. 359	.314	.40535

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.213	1	3.213	19.557	.000
	Residual	53.072	323	.164		
	Total	56.286	324			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.858	.226		12.642	.000
	Mass education campaigns	.548	.124	.539	4.419	.000

From the model, R which is the correlation coefficient showed that there existed a moderate positive relationship between mass education campaigns and uptake and retention of NHIF as indicated by the correlation coefficient of 0.599. The R-squared also called the coefficient of determination is the percent of the variance in the dependent variable explained uniquely or jointly by the independent variables. In this study, the model yielded

an R-squared value of 0.359, indicating that 35.9% of the variations in the uptake and retention of NHIF can be explained by mass education campaigns.

From the ANOVA, the study established that the regression model had a significance level of 0.00 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (19.557> 3.87) an indication that mass education campaigns had a significant effect on uptake and retention of NHIF. The significance value was less than 0.05 indicating that the model was significant.

From the regression model obtained above, a unit change in mass education campaigns while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.548. The p-value was 0.000, an indication that mass education campaigns had a considerable influence on uptake and retention of NHIF at a 5% significance level.

4.5 Demographic Factors on Uptake and Retention of NHIF

4.5.1 Descriptive Statistics

The study investigated the descriptive statistics in regard to demographic factors on uptake and retention of NHIF.

4.5.1.1 Gender of the Respondents

The study sought to find out the gender of the respondents. The respondents were requested to indicate their gender.

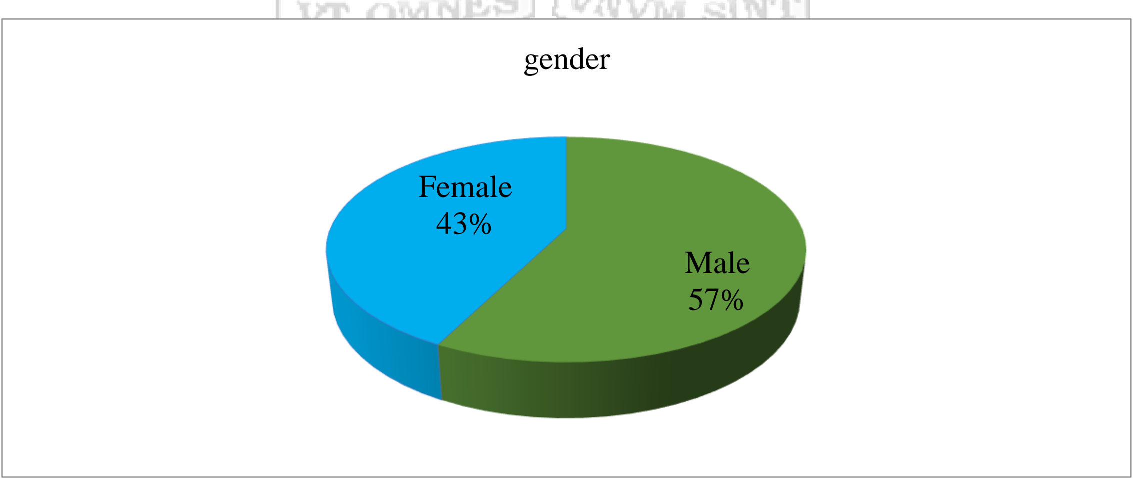

Figure 4.3: Gender of the Respondents

From the findings, the majority of the respondents (57.5%) were male while 42.5% were female. The variance between male and female was low and thus the study was not gender biased.

4.5.1.2 Age Bracket of the Respondents

The study sought to establish the respondents' age bracket with the aim of examining the age distribution of respondents.

Table 4.9: Respondents' Age Bracket

	Frequency	Percentage
18-30 years	76	23.4
31-40 years	134	41.2
41-50 years	92	28.3
Above 51years	23	7.1
Total	**325**	**100**

The findings show that most of the respondents were between 31-40 years, 28.3% were between 41-50 years, 23.4% were between 18-30 years while 7.1% were above 51 years.

4.5.1.3 Marital Status of the Respondents

The study sought to establish the marital status of the respondents. The findings are presented in Table 4.10.

Table 4.10: Marital Status

	Frequency	Percentage
Single	72	22.2
Married	218	67.1
Widowed	11	3.4
Divorced	6	1.8
Separated	18	5.5
Total	**325**	**100.0**

The study found that a majority of the respondents were married (67.1%), 22.2% were single, 5.5% were separated, 3.4% were widowed while 1.8% were divorced. The findings show that the data was obtained from respondents with different marital statuses however the majority were married.

4.5.1.4 Rating on Effect of Demographic Factors on Uptake and Retention of NHIF

The study requested the respondents to indicate their agreement on statements that relate to the effect of demographic factors on uptake and retention of NHIF.

Table 4.11: Statements on Demographic Factors

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Getting married increases the chances of one being enrolled and retained in NHIF	0	55	24	173	73	3.81	0.97
As people get old their chances of being enrolled and retained in NHIF increase	0	0	59	266	0	3.82	0.39
More women tend to enrolled and retained in NHIF compared to men in my region	23	34	127	116	25	3.26	0.99
Families with many children tend to be enrolled and retained in NHIF increase	0	23	56	164	82	3.94	0.84
Health status of household members influence their decision to purchase health insurance	0	0	44	281	0	3.86	0.34

The majority of the respondents agreed that families with many children tend to be enrolled and retained in NHIF as shown by a mean of 3.94 which is in the range of agree between 3.5 to 4.2. The responses had a low standard deviation of 0.84 which is less than 1 which shows a low response variance. The respondents agreed that the health status of household members influences their decision to purchase health insurance as shown by a mean of 3.86 which is in the range of agree between 3.5 to 4.2. The responses had a low standard deviation of 0.34 which is less than 1 which shows a low response variance. The respondents further agreed that as people get old their chances of being enrolled and retained in NHIF increase as shown by a mean of 3.82 which is in the range of agree between 3.5 to 4.2. The responses had a low standard deviation of 0.39 which is less than 1 which shows a low response variance.

The respondents agreed that getting married increases the chances of one being enrolled and retained in NHIF as shown by a mean of 3.81 which is in the range of agree between 3.5 to 4.2. The responses had a low standard deviation of 0.97 which is less than 1 which

shows a low response variance. The respondents were however neutral that more women tend to be enrolled and retained in NHIF compared to men in their region as shown by a mean of 3.26 which is in the range of agree between 2.6 to 3.4. The responses had a low standard deviation of 0.99 which is less than 1 which shows a low response variance.

4.5.2 Inferential Statistics of Demographic Factors

A simple linear regression analysis was conducted to test the effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The model summary is presented in Table 4.12

Table 4.12: Regression between Demographic Factors and Uptake and Retention of NHIF

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.375	.141	.113	.60140

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.245	1	4.245	26.344	.000
	Residual	52.041	323	.161		
	Total	56.286	324			

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.460	.272		9.039	.000
	Demographic factors	.359	.070	.275	5.133	.000

From the model, R which is the correlation coefficient showed that there existed a moderate positive relationship between demographic factors and uptake and retention of NHIF as indicated by the correlation coefficient of 0.375. The model had a coefficient of determination (R^2) of 0.141 and which implied that 14.1% of the variations in uptake and retention of NHIF were explained by demographic factors.

From the ANOVA, the study established that the regression model had a significance level of 0.00 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (26.344> 3.87) an indication that demographic factors had a significant effect on uptake and retention of NHIF. The significance value was less than 0.05 indicating that the model was significant.

From the regression model obtained above, a unit change in demographic factors while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.359. The p-value was 0.000, an indication that demographic factors had a significant influence on uptake and retention of NHIF at a 5% significance level.

4.6 Socio Economic Status on Uptake and Retention of NHIF

4.6.1 Descriptive Statistics

The section seeks to determine the descriptive statistics in regard to socio economic status on uptake and retention of NHIF.

4.6.1.1 Level of Education

The respondents were requested to indicate their highest level of Education. The study results on the highest level of education are presented in Table 4.13.

Table 4.13: Highest level of Education

	Frequency	**Percentage**
Primary	74	22.8
Secondary	148	45.5
Diploma	76	23.4
Bachelor’s degree	25	7.7
Postgraduate	2	0.6
Total	**325**	**100**

The finding shows that 74 (22.8%) of the respondents had attained a primary education, 148 (45.5%) had attained secondary education, 76 (23.4%) indicated to have attained a diploma, 25 (7.7%) had bachelor’s degree while 2 (0.6%) had a postgraduate level of education as their highest level of education.

4.6.1.2 Level of Monthly Income

The study requested the respondents to indicate their level of monthly income.

Table 4.14: Level of Monthly Income

	Frequency	Percentage
Below Ksh 20,000	146	44.9
Ksh 20,000-Ksh35,000	76	23.4
Ksh 35,000-Ksh50,000	59	18.2
Ksh 50,000- Ksh75,000	32	9.8
Above Ksh 75,000	12	3.7
Total	325	100

The findings indicate that 146 (35.7%) of the respondents had a monthly income of below Ksh 20,000, 76 (23.4%) indicated to earn between Ksh 20,000 and Ksh 35,000, 59 (18.2%) indicated Ksh 35,000-Ksh50,000, 32 (9.8%_ indicated Ksh 50,000- Ksh75,000 while 12 (3.7%) indicated above Ksh 75,000.

4.6.1.3 Sufficiency of Income to Ensure Continuity of Enrolment in NHIF

The study further requested the respondents to indicate whether their monthly income is sufficient to ensure their continuity of being enrolled in NHIF.

Table 4.15: Sufficiency of Income to Ensure Continuity Of Enrolment in NHIF

	Frequency	Percentage
Yes	167	51.4
No	158	48.6
Total	**325**	**100.0**

It was noted that 167 respondents representing 51.4% indicated that their monthly income is sufficient to ensure their continuity of being enrolled in NHIF while 158 respondents indicating 48.6% indicated that their monthly income is not sufficient to ensure their continuity of being enrolled in NHIF. These findings suggest that a significant proportion of the respondents face financial challenges in maintaining their NHIF enrolment.

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4.6.1.4 Effect of Socio-Economic Status on Uptake and Retention of NHIF

The study requested the respondents to indicate their agreement on statements that relate to the effect of socio-economic status on uptake and retention of NHIF.

Table 4.16: Effect of Socio-Economic Status on Uptake and Retention of NHIF

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
My education level determined whether I would purchase NHIF insurance	0	12	40	220	53	3.97	0.66
My occupation determined whether I would purchase NHIF insurance	0	12	24	236	53	4.02	0.62
My household income determined whether I would purchase NHIF insurance	0	34	12	210	69	3.97	0.82
Any increase in my income would encourage me to uptake other forms of insurance apart from NHIF	3	46	20	222	34	3.73	0.86
Increase in cost of premiums may prevents me from purchasing NHIF insurance	0	12	82	179	52	3.84	0.73
Formal sector employment provides more health insurance access to compared informal employment	0	4	43	221	57	4.02	0.60

The majority of the respondents agreed that their occupation determined whether they would purchase NHIF insurance as shown by a mean of 4.02 which is in the range of agree between 3.5 to 4.2 and a low standard deviation of 0.62 which is less than 1 which shows a low response variance. The respondents agreed that formal sector employment provides more health insurance access to compared informal employment as shown by a mean of 4.02 which is in the range of agree between 3.5 to 4.2 and a low standard deviation of 0.60 which is less than 1 which shows a low response variance. The respondents also agreed that their education level determined whether they would purchase NHIF insurance as shown by a mean of 3.97 which is in the range of agree between 3.5 to 4.2 and a low standard deviation of 0.66 which is less than 1 which shows a low response variance.

The respondents also agreed that an increase in the cost of premiums may prevent them from purchasing NHIF insurance as shown by a mean of 3.84 which is in the range of agree

between 3.5 to 4.2 and a low standard deviation of 0.73 which is less than 1 which shows a low response variance. The respondents further agreed that any increase in their income would encourage them to uptake other forms of insurance apart from NHIF as shown by a mean of 3.73 which is in the range of agree between 3.5 to 4.2 and a low standard deviation of 0.86 which is less than 1 which shows a low response variance. The respondents were in agreement that household income determined whether they would purchase NHIF insurance as shown by a mean of 3.73 which is in the range of agree between 3.5 to 4.2 and a low standard deviation of 0.82 which is less than 1 which shows a low response variance.

4.6.2 Inferential Statistics of Socio-Economic Status

A simple linear regression analysis was conducted to test the effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The model summary is presented in Table 4.17.

Table 4.17: Regression Between Socio Economic Status and Uptake and Retention of NHIF

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.544[a]	.296	.238	.49312

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.160	1	1.160	6.798	.010
Residual	55.126	323	.171		
Total	56.286	324			

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	3.176	.261		12.190	.000
Socio economic status	.371	.081	.144	4.581	.010

From the model, R, which is the correlation coefficient showed that there existed a moderate positive relationship between socio economic status and uptake and retention of NHIF as indicated by the correlation coefficient of 0.544. The model had a coefficient of determination (R^2) of 0.296 and which implied that 29.6% of the variations in uptake and retention of NHIF were explained by socio economic status.

From the ANOVA, the study established that the regression model had a significance level of 0.10 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (6.798> 3.87) an indication that socio economic status had a significant effect on uptake and retention of NHIF. The significance value was less than 0.05 indicating that the model was significant.

From the regression model obtained above, a unit change in socio economic status while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.371. The p-value was 0.010, an indication that socio economic status had a major influence on uptake and retention of NHIF at a 5% significance level.

4.7 Quality of Service on Uptake and Retention of NHIF

4.7.1 Descriptive Statistics

The study requested the respondents to indicate their level of agreement on statements that relate to the effect of quality of service on uptake and retention of NHIF.

Table 4.18: Effect of Quality of Service on Uptake and Retention of NHIF

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
I am able to access the services offered by NHIF in my County	13	24	68	126	94	3.81	0.15
The delivery of services offered by NHIF in my County is sufficient	18	59	108	82	58	3.32	0.10
The health staff that offer health and medical services are competent	0	4	52	269	0	3.82	0.42
There is quicker response from NHIF on any enquiry needed in regard to health insurance	0	28	48	182	67	3.89	0.83
The NHIF services are affordable as compared to cash payment and other insurance	0	0	59	227	39	3.94	0.55
The staffs at NHIF are friendly to the customers and efficient	0	16	35	156	118	4.12	0.80

The respondents agreed that they are able to access the services offered by NHIF in their County as shown by a mean of 3.81 while the standard deviation was 0.15 which is less than 1 which shows a low response variance. Majority of the respondents were neutral that the delivery of services offered by NHIF in their County is sufficient as shown by a mean of 3.32 and the responses had a low standard deviation of 0.1 which is less than 1 which shows a low response variance. The respondents also agreed that the health staff that offer health and medical services are competent as shown by a mean of 3.82 and the responses had a low standard deviation of 0.42 which is less than 1 which shows a low response variance. The respondents agreed that there is a quicker response from NHIF on any

enquiry needed in regard to health insurance as shown by a mean of 3.89 and the responses had a low standard deviation of 0.83 which is less than 1 which shows a low response variance.

The respondents expressed agreement that the NHIF services are affordable compared to cash payment and other insurance options, as evidenced by a mean score of 3.94. Moreover, the responses displayed a low standard deviation of 0.55, which is less than 1, indicating a low level of response variance. The respondents further agreed that the staff at NHIF are friendly to the customers and efficient as shown by a mean of 4.12 and the responses had a low standard deviation of 0.80 which is less than 1 which shows a low response variance.

4.7.2 Inferential Statistics

A simple linear regression analysis was conducted to test the effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The model summary is presented in Table 4.19.

Table 4.19: Regression Between Quality of Service and Uptake and Retention of NHIF

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.637	.406	.343	.30254

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.163	1	3.163	19.233	.000
	Residual	53.123	323	.164		
	Total	56.286	324			

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.846	.231		12.338	.000
	Quality of service	.451	.111	.367	4.063	.000

From the model, R which is the correlation coefficient showed that there existed a moderate positive relationship between quality of service and uptake and retention of NHIF as indicated by the correlation coefficient of 0.637. The model had a coefficient of determination (R^2) of 0.343 and which implied that 34.3% of the variations in uptake and retention of NHIF were explained by the quality of service.

From the ANOVA, the study established that the regression model had a significance level of 0.00 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (19.233> 3.87) an indication that quality

of service had a significant effect on uptake and retention of NHIF. The significance value was less than 0.05 indicating that the model was significant.

From the regression model obtained above, a unit change in the quality of service while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.451. The p-value was 0.000, an indication that quality of service had a significant influence on uptake and retention of NHIF at a 5% significance level.

4.8 Uptake and Retention of NHIF

4.8.1 Descriptive Statistics

The study requested the respondents to indicate their level of agreement on statements that relate to uptake and retention of NHIF.

Table 4.20: Statements on Uptake and Retention of NHIF

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
I am able to pay my monthly NHIF premiums in time	4	28	58	191	44	3.75	0.84
I can still remain as an NHIF member if there no significant increase in premium contribution	2	34	46	187	56	3.80	0.87
The number of people enrolled to NHIF in my community has been increasing over the years	1	7	56	197	64	3.97	0.69
More people have been able to remain in NHIF coverage in my locality	3	17	33	233	39	3.89	0.71

The majority of the respondents agreed that the number of people enrolled to NHIF in their community has been increasing over the years as shown by a mean of 3.97 which is in the range of agree between 3.5 to 4.2 and a standard deviation of 0.69 which is less than 1 which shows a low response variance. The respondents agreed that more people have been able to remain in NHIF coverage in their locality as shown by a mean of 3.89 which is in the range of agree between 3.5 to 4.2 and a standard deviation of 0.71 which is less than 1 which shows a low response variance. The respondents further agreed they can still remain as an NHIF member if there is no significant increase in premium contribution as shown by a mean of 3.80 which is in the range of agree between 3.5 to 4.2 and a standard deviation of 0.87 which is less than 1 which shows a low response variance. The respondents also

agreed they are able to pay their monthly NHIF premiums in time as shown by a mean of 3.75 which is in the range of agree between 3.5 to 4.2 and a standard deviation of 0.84 which is less than 1 which shows a low response variance.

4.9 Overall Relationship

A multiple regression analysis was conducted to test the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The model summary is presented in Table 4.21.

Table 4.21: Regression of the Factors Influencing Uptake and Retention of NHIF

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715	.511	.409	.29703

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.844	4	1.461	9.268	.000
	Residual	50.442	320	.158		
	Total	56.286	324			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.997	.353		5.652	.000
	Mass education campaigns	0.535	0.113	0.13	4.735	.000
	Demographic factors	0.377	0.078	0.312	4.833	.001
	Socio economic status	0.412	0.095	0.341	4.337	.003
	Quality of service	0.472	0.107	0.468	4.411	.000

The overall regression model will be as follows;

$$Y = 1.997 + 0.535X_1 + 0.377X_2 + 0.412X_3 + 0.472X_4 + ȩ$$

From the model, R which is the correlation coefficient showed that there existed a strong positive relationship between the factors mass education campaigns, demographic factors, socio economic status and quality of service and uptake and retention of NHIF as indicated by the correlation coefficient of 0.715. The R-squared also called the coefficient of determination is the percent of the variance in the dependent variable explained uniquely or jointly by the independent variables. The model had a coefficient of determination (R^2) of 0.511 and which implied that 51.1% of the variations in uptake and retention of NHIF were explained by mass education campaigns, demographic factors, socio economic status and quality of service.

From the ANOVA, the study established that the regression model had a significance level of 0.00 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (9.268>2.4) an indication that mass education campaigns, demographic factors, socio economic status and quality of service had a significant effect on uptake and retention of NHIF. The significance value was less than 0.05 indicating that the model was significant.

From the regression model, a unit change in mass education campaigns while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.535. The p-value was 0.000, an indication that mass education campaigns had a significant influence on uptake and retention of NHIF at a 5% significance level.

From the regression model, a unit change in demographic factors while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.377. The p-value was 0.001, an indication that demographic factors had a significant influence on uptake and retention of NHIF at a 5% significance level.

From the regression model, a unit change in socio economic status while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.412. The p-value was 0.003, an indication that socio economic status had a significant influence on uptake and retention of NHIF at a 5% significance level.

From the regression model, a unit change in the quality of service while holding other factors constant would positively change uptake and retention of NHIF by a factor of 0.472. The p-value was 0.000, an indication that quality of service had a significant influence on uptake and retention of NHIF at a 5% significance level.

4.10 Chapter Summary

The chapter has presented the analysis of the research findings based on the field data. Both descriptive and inferential statistics for each variable has been presented in the chapter. The findings from the chapter have shown that mass education campaigns, demographic factors, socio economic status and the quality of service positively affect the uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

CHAPTER FIVE: DISCUSSIONS, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The main objective of the study was to determine the factors influencing uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The specific objectives of the study were to examine the effect of mass education campaigns on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties; to evaluate the effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties; to determine the effect of socio economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties; to determine the effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties.

5.2 Discussions of Findings

5.2.1 Mass Education Campaigns and Uptake and Retention of NHIF

The study sought to establish the effect of mass education campaigns on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between mass education campaigns and uptake and retention of NHIF. There existed a moderate positive relationship between mass education campaigns and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. A unit change in mass education campaigns while holding other factors constant would positively change uptake and retention of NHIF. Consistent with the study findings, Maina (2019) found awareness to be a significant predictor of health insurance uptake.

The study established that the members of the informal sector are aware of the requirements needed to enrol in NHIF. The advertisements made on the importance of NHIF made them enrol on the scheme. The NHIF effectively communicates any information that is of help to the members. The members of the informal sector are aware of NHIF services they can access and how to access them. There has been awareness of the importance of NHIF enrolment because of education campaigns conducted in the Counties. The members of the informal sector are aware of the health benefits they will have after enrolling on NHIF. There has been awareness of how to enrol on NHIF because people have been informed in the counties. Inconsistent with the findings, Kariuki, Mavole and Okuku (2018) found that

the respondents had insufficient information on how to register, how to pay premiums and how they were to benefit if they enrolled in Nyeri County among self-employed persons.

5.2.2 Demographic Factors and Uptake and Retention of NHIF

The study sought to establish the effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between demographic factors and uptake and retention of NHIF. There existed a moderate positive relationship between demographic factors and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. A unit change in demographic factors while holding other factors constant would positively change uptake and retention of NHIF. Similarly, Alesane and Anang (2018) found that in Ghana, socio-demographic characteristics such as age, sex, literacy level and household size affect the decision to enroll.

The study found that families with many children tend to be enrolled and retained in NHIF increase. The health status of household members influences their decision to purchase health insurance. As people get old their chances of being enrolled and retained in NHIF increase. The study also found that getting married increases the chances of one being enrolled and retained in NHIF. consistent with the findings, Malicha (2020) found that demographic factors influence the uptake of NHIF as with increased age, people may be more inclined to take charge of improving the welfare of their family members.

5.2.3 Socio Economic Status and Uptake and Retention of NHIF

The study sought to establish the effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between socio economic status and uptake and retention of NHIF. There existed a moderate positive relationship between socio economic status and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. A unit change in socio economic status while holding other factors constant would positively change uptake and retention of NHIF. The findings corroborate the findings by Robert and Rebbeca (2017) that socio economic status affects the uptake of health insurance schemes.

The study revealed that the occupation of the informal sector members determined whether they would purchase NHIF insurance. Formal sector employment provides more health insurance access compared to informal employment. The education level determined whether they would purchase NHIF insurance. The household income determined whether

they would purchase NHIF insurance. An increase in cost of premiums may prevent them from purchasing NHIF insurance. Any increase in their income would encourage them to uptake other forms of insurance apart from NHIF. The findings concur with Sarpong (2018) whose findings revealed that the uptake and utilization of health insurance are dependent on the people's ability to pay.

5.2.4 Quality of Service and Uptake and Retention of NHIF

The study sought to establish the effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between quality of service and uptake and retention of NHIF. There existed a moderate positive relationship between the quality of service and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. A unit change in the quality of service while holding other factors constant would positively change uptake and retention of NHIF. Similarly, Fenny et al. (2016) found in Ghana, service quality determines uptake and renewal of health insurance.

The study found that the delivery of services offered by NHIF in the counties is sufficient. The staffs at NHIF are friendly to the customers and efficient. The informal sector members are able to access the services offered by NHIF in their county. The NHIF services are affordable as compared to cash payment and other insurance. There is a quicker response from NHIF on any enquiry needed in regard to health insurance. The study also found that the health staff that offer health and medical services are competent. Similarly, Tefera et al. (2021) found that high ratings of overall satisfaction with services played a more significant role in health insurance enrollment and renewal decisions.

5.3 Conclusions

The study sought to establish the effect of mass education campaigns on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between mass education campaigns and uptake and retention of NHIF. As the nudge theory outlines, mass education campaigns being conducted by NHIF and the County Government has been used as a nudge to influence the uptake and retention of County residents to NHIF. The study, therefore, concludes that there is a positive relationship between mass education campaigns and uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The members of the informal

sector are aware of the requirements needed to enrol in NHIF and of NHIF services they can access and how to access them.

The study sought to establish the effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between demographic factors and uptake and retention of NHIF. The study thus concludes that there is a positive effect of demographic factors on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The number of children, health status, marital status and age influence the decision to purchase health insurance.

The study sought to establish the effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between socio economic status and uptake and retention of NHIF. Therefore, there is a positive effect of socio-economic status on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The occupation, education and household income of the informal sector members determined whether they would purchase NHIF insurance.

The study sought to establish the effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The study found a positive association between quality of service and uptake and retention of NHIF. The study thus concludes that there is a positive effect of quality of service on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia Counties. The delivery of services offered by NHIF in the counties is sufficient and the members are able to access the services offered by NHIF in the counties.

5.4 Recommendations

5.4.1 Policy Recommendations

The government should have policies that allow the NHIF scheme to adopt diverse mechanisms in structuring the scheme in a bid to ensure that the scheme accommodates every social class in the society, especially the low-income earners. This would a long way in ensuring that the government meets the health goals envisioned in vision 2030.

5.4.2 Managerial Recommendations

Based on the findings, the study suggests that NHIF should intensify its mass education campaigns to reach an even broader audience and increase the uptake and retention of NHIF services, particularly among the informal sector in Tharaka Nithi and Laikipia Counties. The study recommends that NHIF should have diverse targeted tariffs for various groups of people so as not to limit the uptake to some. This should ensure that demographic factors such as age do not discourage one from enrolling on the scheme.

The study recommends that the NHIF scheme should be organized in a way that accommodates those in different occupations, with different educational backgrounds and income levels. The scheme should not discourage those in the low-income class.

The study also recommends that NHIF should encourage and maintain the sufficiency in service delivery in the counties to promote the uptake and retention of NHIF by the informal sector.

5.4.3 Theoretical Contributions

The study adopted the rational choice theory which the study findings support by revealing that the awareness of the importance of NHIF influences the choice to take up and retain the scheme. The Nudge Theory was also adopted in the study and supported by the findings where the NHIF uptake and retention is influenced by factors such as demographics, social economic status and service quality. The study recommends that other theories should underpin future studies to support other objectives.

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5.5 Limitations of the Study and Suggestions for Further Research

The study had no control over the information that was filled out in the questionnaires. Respondents were a bit hesitant in providing information for the study; however, the researcher reassured them by explaining that the study was to be conducted solely for academic purposes. To maximize the collection of reliable data, the researcher promised the respondents confidentiality because no names would be mentioned in the report. The study established the factors influencing uptake and retention of NHIF by the informal sector as mass education campaigns, demographic factors, socio economic status and quality of service. The study suggests that further studies should be undertaken on the factors influencing uptake and retention of other medical insurance schemes.

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APPENDICES

Appendix 1: Letter of Introduction

DATE: ………………………………………………..

GOVERNER ………………………………….COUNTY

P.O. BOX ………………………….

Dear, Respondent

RE: ACADEMIC RESEARCH PROJECT

I am a master's in public policy & Management student at Strathmore business School. I am carrying out a study on impact of county specific strategies on uptake and retention of NHIF by the informal sector in Tharaka Nithi and Laikipia counties.

The results of the study will contribute to existing knowledge on studies done on informal sector enrolment and retention strategies to Social Health Insurance schemes. The study will also help County Governments understand how best to go about ensuring their informal sector population are enrolled and retained to a social health insurance and policymakers will have an enriched plan on how best to achieve UHC through voluntary contributory health insurance schemes.

Your County has been chosen to take part in the study from the commitment demonstrated in your County Integrated Development Plans 2018-222, to ensure your residents are enrolled to NHIF. As part of data collection, I will be conducting in-depth interviews with various stakeholders and staff who have been involved in the development of the CIDPs and those in the Health and Social Protection Departments. Participation in this research is voluntary and all information shared will be confidential.

Your participation in this study will be highly appreciated.

Yours faithfully,

Margaret Macharia

Appendix II: NACOSTI Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **179140**

Date of Issue: **24/February/2023**

RESEARCH LICENSE

This is to Certify that Ms.. Margaret Nyambura Macharia of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Laikipia, Tharaka-Nithi on the topic: A COMPARATIVE STUDY ON UPTAKE AND RETENTION OF NHIF BY THE INFORMAL SECTOR: THE CASE OF THARAKA NITHI AND LAIKIPIA COUNTIES for the period ending : 24/February/2024.

License No: NACOSTI/P/23/23854

179140

Applicant Identification Number

Director General

NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document,
Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix II: Questionnaire

Section A: General Information

1. For how long have you enrolled in NHIF?

Less than 5 years [ ]   Between 5-7 years [ ]

Between 8-10 years [ ]   Over 10 years [ ]

Part B: Mass Education Campaign

2. Please indicate whether there has been education campaign conducted by NHIF on importance of enrolment in your County?

Yes [ ]

No [ ]

3. What's your agreement when it comes to statements that relate to the effect of mass education campaign on uptake and retention of NHIF?

Where Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Statement	**1**	**2**	**3**	**4**	**5**
There has been awareness on the importance of NHIF enrolment because of education campaigns conducted in my County					
There has been awareness of how to enrol to NHIF because people have been informed in my County					
I am aware of the health benefits I will have after enrolling to NHIF					
I am aware of NHIF services I can access and how to access them as a member					
I am aware of the requirements needed to enrol in NHIF					
NHIF communicates effectively on any information that is of help to the members					

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The advertisement made on the importance of NHIF made me enrol to the scheme					

Part C: Demographic Factors

4. Kindly indicate your gender. [ ] Male [ ] Female
5. Kindly indicate your age bracket. 20-30 years [ ] 31-40 years [ ]

   41-50 years [ ] Above 51years [ ]

6. What is your marital Status?

   Single [ ] Married [ ] Widowed [ ]

   Divorced [ ] Separated [ ]

7. What's your agreement when it comes to statements that relate to the effect of demographic factors on uptake and retention of NHIF?

Where Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Statement	**1**	**2**	**3**	**4**	**5**
Getting married increases the chances of one being enrolled and retained in NHIF					
As people get old their chances of being enrolled and retained in NHIF increase					
More women tend to enrolled and retained in NHIF compared to men in my region					
Families with many children tend to be enrolled and retained in NHIF increase					
Health status of household members influence their decision to purchase health insurance					

Part C: Socio Economic Status

8. What is your highest level of Education?

Diploma [ ] Bachelor Degree [ ] Postgraduate [ ]

9. Kindly indicate your occupation in the informal sector?

....

10. Kindly indicate the level of your monthly income

    Below Ksh 20,000

    Ksh 20,000-Ksh35,000

    Ksh 35,000-Ksh50,000

    Ksh 50,000- Ksh75,000

    Above Ksh 75,000

11. Is your monthly income sufficient to ensure your continuity of being enrolled in NHIF?

    Yes [ ]

    No [ ]

12. What's your agreement when it comes to statements that relate to the effect of socio economic status on uptake and retention of NHIF?

Where Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Statement	**1**	**2**	**3**	**4**	**5**
My education level determined whether I would purchase NHIF insurance					
My occupation determined whether I would purchase NHIF insurance					
My household income determined whether I would purchase NHIF insurance					
Any increase in my income would encourage me to uptake other forms of insurance apart from NHIF					
Increase in cost of premiums may prevents me from purchasing NHIF insurance					

Formal sector employment provides more health insurance access to compared informal employment					

Part C: Quality of Service

13. What's your agreement when it comes to statements that relate to the effect of quality of service on uptake and retention of NHIF?

Where Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Statement	**1**	**2**	**3**	**4**	**5**
I am able to access the services offered by NHIF in my County					
The delivery of services offered by NHIF in my County is sufficient					
The health staff that offer health and medical services are competent					
There is quicker response from NHIF on any enquiry needed in regard to health insurance					
The NHIF services are affordable as compared to cash payment and other insurance					
The staffs at NHIF are friendly to the customers and efficient					

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Part C: Quality of Service

14. What's your agreement when it comes to statements that relate to uptake and retention of NHIF?

Where Strongly Disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly Agree (5)

Statement	**1**	**2**	**3**	**4**	**5**
I am able to pay my monthly NHIF premiums in time					

I can still remain as an NHIF member if there no significant increase in premium contribution					
The number of people enrolled to NHIF in my community has been increasing over the years					
More people have been able to remain in NHIF coverage in my locality					

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