DETERMINANTS OF WILLINGNESS TO RENEW NATIONAL HOSPITAL INSURANCE FUND AMONG NATIONAL SCHEME MEMBERS IN KAJIADO COUNTY, KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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DEDICATION

To my children Baron, Kibet, and Lemaiyian. Moreover, to my wife, Catherine. Every moment of this journey has been made better because of you.

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ABSTRACT

Under the WHO's systems strengthening building blocks, Health financing is key to achieving universal health coverage (UHC). However, progress to achieve equity, quality and financial protection is slow especially in Africa. Kenya is rolling-out national health insurance scheme through NHIF towards achieving UHC. However, evidence shows that uptake of NHIF is low and that voluntary membership is marked by high attrition rates. This survey sought to establish the factors connected with willingness to renew the NHIF among Supa cover members in Kajiado County. The study used mixed methods cross sectional survey to establish the causal factors of willingness to renew their NHIF covers among national scheme members. Respondents were selected through purposive sampling with stratification. Quantitative data was collected through researcher-administered questionnaires rated on a 5-point Likert scale while qualitative data was collected using key informant interview (KII) guides. The study was approved by KeMU Scientific Ethical Research Committee (SERC and a research license to conduct the research was authorized by the national commission for science, technology and innovation (NACOSTI). Data was entered in Microsoft Excel 2016, exported to SPSS version 26 for analysis. Descriptive statistics were reported using median and interquartile ranges. Binary logistic regression was used to establish the significant determinants associated with the willingness to renew the insurance covers. P-values of less than 0.05 were considered statistically significant. Overall, respondents showed high willingness to renew NHIF (median 3.86, IQR 0.75). At the multivariate logistic regression, the study findings showed that controlling for all factors, marital status, household size, household income per month, awareness of NHIF fund services, service providers and adverse selection on willingness to renew were significant determinants of willingness to renew the insurance cover ($p<0.05$). In conclusion, the study found that the key determinants of willingness to renew NHIF among residents of this region include; awareness of NHIF services, Service provider factors and adverse selection. Others are marital status, household size and household income. NHIF should increase the community's awareness on the health insurance risk-benefits through member education and improve access to high-grade health services in the accredited institutions to enhance renewal of cover by members.

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LIST OF ABBREVIATION AND ACRONYMS

CBHI)	Community-based health insurance
FFS	Fee for service
GOK	Government of Kenya
KII	Key informant interview
LMIC's	Low and middle-income countries
NACOSTI	National Commission for Science, Technology and Innovation
NHIF	National Hospital Insurance Fund
SACCO	Savings and credit cooperative organization
SDG	Sustainable Delivery Goals
SERC	Scientific Ethical Research Committee
SPSS	Statistical Package for the Social Sciences
UHC	Universal health coverage
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1 Background of Study

Health systems are weak across many parts of advanced economies and emerging Countries in the world. In their quest to achieve the' global health agenda such as the sustainable development goal 3, World health organization (WHO, 2007) established "a common framework of action for strengthening health systems made up of the six building blocks including: service delivery, human resources for health, information, medical products, vaccines and technologies; financing; and leadership and governance (stewardship)" (WHO, 2007 p.3). Health financing through universal health coverage is among the key ingredients for strengthening sustainable development goal 3.

In Africa, most countries consider UHC as priority in the national development agenda for their health sectors. However, progress in actualizing these commitments to balloon the domestic resource envelope for health, external support in aid, equity and quality health services, and ultimately financial protection, is yet to catch-up with expectations (World Bank, 2016). Studies on health insurance in Africa paint a bleak future on the likelihood of governments to pay for scaled either commercial or centralized schemes akin to those in the western world (Arhin-Tenkorang, 2001). A study conducted in Rwanda established that community-based health insurance (CBHI) is achievable and can stand the test of time, but only when there are persistent political commitment efforts are put to achieve UHC in the long-term (Nyandekwe, 2020).

Kenya is rolling-out national health insurance scheme through NHIF as the main mechanism of a voluntary contributory scheme for towards achieving UHC (National Hospital Insurance Fund [NHIF], 2018). The Ministry of health has piloted this in four

Counties of in Kenya. According to reports generated from the pilots there is a need for strengthening strategic purchasing at the County level. (Shano, 2020). Even though, UHC is an important agenda in Kenya, stakeholders do not have a common position as to how many of the populations has to be covered to realize universal health coverage. There is consensus amongst stakeholders however, that the NHIF has a role in organizing for coordinated mechanisms of reaching different strata of the population to ensure fairness in acquisition of health services in Kenya (Oraro-Lawrence, 2020).

The Kenya government is using NHIF with the intention of increasing the number of citizens voluntarily contributing to prepaid financing of health care. It has extended the NHIF public welfare program to include the non-formal employment sector through several ways by targeting members of cooperatives and artisan in Jua Kali. The aim was to reach at least half of the voluntary contributors from 2011-2015. It designed innovative approaches including products for Savings and Credit Cooperative Organizations (SACCO) groups and /or use of branches for the collection of premiums, (Government of Kenya[GOK], 2012).

NHIF the last few years rolled out and executed number of changes with the aim to scale up membership by including of incentives such as out-patient benefit (Barasa, et al., 2017), as a way to achieve universal health coverage (Muiya, 2013).

1.2 Statement of the Problem

A recent review revealed that uptake of insurance for health in Kenya is modest and that the voluntary contribution is marked by high dropout rates (Barasa et al., 2018). For Kajiado County, a study found that uptake of NHIF was very low (Kipaseiyia, 2016). Reports indicate that despite a rise in the number of contributors (Alushula, 2021), over

half of the 10.6 million contributors had not paid premiums on time by end of June that year after allegedly after benefiting from NHIF services. From NHIF data, Kitengela in Kajiado country), the number of active informal sector members had dropped from 14,470 in 2018/19 financial year to 9,962 in 2019/2020 representing a 32% drop and from 9617 to 7400 (23%) drop among the self-employed group (NHIF, 2021a). This is despite the strategy of paying 16 shilling a day implemented for the Informal sector national scheme of the NHIF. This denies NHIF the much-needed revenues to the national pool that provides cover to all registered members and risks of sustainability for the institution.

This study seeks to establish factors linked with willingness to renew in National Hospital Insurance fund, among informal sector National scheme members in Kajiado County. The findings of this research will yield critical evidence to remodel NHIF to allow informal sector groups greater entry to value added and low cost health care services.

1.3 Purpose of the Study

The purpose of this study was to develop a greater insight of the factors that determine willingness to renew in the NHIF's National scheme (supa cover) members in Kajiado given the importance of social insurance cover in ensuring equitable access to quality health care.

1.4 Specific Objectives

i. To establish the influence of premium level on willingness to renew of NHIF among members of the national scheme members of Kajiado County.

ii. To determine the influence of awareness of NHIF fund services on willingness to renew of the scheme among national scheme members of Kajiado County.

iii. To establish the influence of service providers on willingness to renew among national scheme members of Kajiado County.

iv. To determine the influence of adverse selection on willingness to renew among National scheme members of Kajiado County.

1.5 Research Questions

i. What is the influence of premium level on willingness to renew of NHIF among members of the national scheme members of Kajiado County.?

ii. In which ways does awareness of NHIF fund services on willingness to renew of the scheme among national scheme members of Kajiado County?

iii. To what extent do service providers influence willingness to renew among national scheme members of Kajiado County?

iv. What is the influence of adverse selection on willingness to renew among National scheme members of Kajiado County?

1.6 Justification of the Study

Self-employed members are at risk of economic shocks emanating from calamitous out-of-pocket payment for health services. Therefore, apprehension of the distinctive group needs concerning how they sustain membership in NHIF is important and particularly if the Kenya administration is to reduce inequity and provide inclusivity in health care for those marginalized due to economic reasons.

The findings of this study has implications on the equity and sustainability of health care insurance in Kenya both for the government and for NHIF as an institution particularly on informal sector. The study contributed to the advancement of knowledge on the social

insurance coverage in the informal sector for the Kenyan government and inform the envisaged scale- up universal health care (Shano, 2020).

For the NHIF, this study's findings yielded to an increased appreciation of factors behind erratic payment of premiums, particularly among the national scheme targets. (GOK, 2012), and determine how premium level, awareness, service providers and adverse selection influence participation in NHIF among groups in this sector and lead to be-spoke interventions that enabled them to sustainably pay for the national insurance scheme.

1.7 Limitations of the Study

This study foresaw a number of limitations. Firstly, lack of previous research studies on the topic and therefore we lacked the benefit of these prior studies provide the theoretical foundations for the research question under investigation. Secondly, there are multi-dimensional factors that influence NHIF willingness to renew.

1.8 Delimitation of the Study

The researcher resorted to using different typologies such as use of exit questionnaire and augmented the same with key information interviews working. This study considered only four variables, among the many that influence willingness to renew insurance.

1.9 Significance of the Study

This research aimed at contributing to the existing branch of discipline about the voluntary schemes willingness to renew both in practical and theoretical terms. Theoretically, this study aimed at enriching the government of Kenya approach in achieving its goal, which is Universal health coverage (UHC).

The study also yielded practical implications for the NHIF as it seeks to recruit and retain informal sector members, by developing tailor made solutions that address the needs of this group of the society.

1.10 Assumptions of the Study

A universal assumption was that deficiency in social welfare such as NHIF coverage is a threat to the wellbeing of individuals due to the risk of catastrophic spending. A second assumption based on previous research, is that NHIF is the most accessible statutory health medical cover in Kenya. A third assumption is that Informal sector members are interested in having a proper mechanism to finance their health needs and have the mental capacity to understand the subject of health insurance.

1.11 Operational definition of Terms

Table 1.1

Operational Definition of Terms

	Variable	Definition	Reference
1.	**Informal sector**	A sub-group of the economy that covers unregistered enterprises that are unregistered or small. In this study, refers to individuals who are self-employed and are current or formerly NHIF national scheme members.	(world bank group, 2016)
2.	**Renewal**	Is an effort an institution does with aim to avoid customer attrition. In this study it is used to describe the members who remain default on NHIF by way of paying premiums	(Nema & Jatav, 2017)
3.	**Premium**	Prepayment made retain membership in an insurance scheme for individual or groups. In this study. It refers to the Ksh 500 payable by national scheme members or prorated to 16 Ksh /day	(Kurt, 2021)
4.	**Awareness**	Cognizance of the member on the availability of social welfare schemes, it working mechanisms and importance. In this study, knowledge about the mode of working of NHIF by national scheme members as a factor for willingness to renew of health insurance was explored in this study.	(Reshmi, et al., 2021)
5.	**Service providers:**	An entity or individual that provides health care services to in an ecosystem according to agreed standards. In this study only	(Definitionsnet, 2021)

		NHIF accredited institutions including hospitals, clinics, primary care centres, were considered.	
6.	**Adverse selection**	A situation in which consumers and providers of an insurance facility have difference in information provided to each other. For example, in health insurance this happens when a person applies/renews for health and even drops off after benefiting.	(Independent health insurance Specialty Benefits, [IHC] , 2021)
7.	**Utilization**	Quantity of services used upon registration into a health care scheme for the purpose of improved sense of well-being. In this study, any service that national scheme members had consumed and paid for by NHIF were considered.	(Casquillo, 2013)
8.	**National Scheme (Supa cover)**	The National Scheme also called (Supa Cover) was a medical insurance cover that enabled the member to enjoy all the benefits outlined in the benefit package. All self-employed members were automatically in the National Scheme, paid 500 shillings per month for the main member and their dependents. Other employed members who are not in a managed scheme also formed the membership were also members.	(NHIF, 2018)

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examined other studies linked to the research topic and delved on the following areas, health insurance in Kenya and explored the variables influencing willingness to renew in voluntary health insurance schemes. The issues discussed included the influence of premium level, awareness of NHIF fund services, Influence of health service providers including health care workers in facilities and Influence of adverse selection on willingness to renew in the national insurance scheme (supa cover).

2.2 Health Insurance in Kenya

In many parts of the world, distinct designs for funding health care are utilized simultaneously. This includes tax based financing to government-owned facilities, community insurance for formal workers, and individual contributions for the self-employed and the well-off (World bank et al., 2016). According to researchers, there is no silver bullet to funding health as each mechanism has its share of setbacks, environmental factors including governance capability in addition to how the human resource market is regulated. A healthy funding mechanism considers workability, fairness, adequacy and continuity (McIntyre & Kutzin, 2016).

In Kenya, insurance for health care in Kenya has three entry types: National schemes, private provider's schemes and community-members pooling schemes (CBHI). Community-pooling systems are considerably novel for Kenya and consequently dismal in coverage at only 1.2 %. (Muiya, 2013). Informal sector workers face unique set of challenges to enrol and retain their enrolled status with NHIF (Kamau & Kamau, 2016).

The NHIF is one of the longest established schemes in Africa from 1966 (Timothy et al., 2015). At the onset, it covered only formal worker however, in 1972, changes were made to include self-employed workers**.** (Kamau & Kamau, 2016). Public insurance is based on risk amalgamation of its members, all of its people, and on combining the contributions of these individuals and other associates. The major players in this exercise are the families, business institutions and government. (Suchman et al., 2020). The contributions are for payment of health services for their members.

Kenya Government intention since 1998 was to modify and utilize the NHIF scheme as means to achieve socialized health care for the citizenry. (Mukhwana et al., 2015). There has been significant legislative efforts aimed at enhancing UHC, increasing the chances of fairness and inclusion of the entire population healthcare services (Kimani et al., 2014). The government is currently deploying the NHIF as the main mechanism of contributory health funding and risk amalgamation towards achieving UHC (NHIF, 2018). The NHIF is mandated to coordinate the entry of populations to quality healthcare through intentional pooling of resources and strategic purchasing in conjunction with associates in the industry. The National Scheme also called (Supa Cover) is a medical insurance cover that enables the member to enjoy all the benefits outlined in the benefit package. All self-employed members are automatically in the National Scheme; pay 500 shillings per month for the main member and their dependents. Other employed members who are not in a managed scheme are also in the national scheme (Supa Cover). Members in the National Scheme can access services from Category A and some of Category B hospitals (NHIF, 2021b).

Approximately 25% of Kenya's' population are enrolled to the NHIF fund, that has ensured about 8.5 million Kenyans enjoy health care services (NHIF, 2018). Those excluded from the current schemes, are of concern with regard to fairness in financial entry to health care particularly the indigents face vulnerability to economic crisis related to calamitous out-of-pocket expenditure.

Although the NHIF Statute renders the institution powers to cover both admission and-outpatient care, coverage extension to preventive medicine benefits are not rolled-out (Muiya, 2013). It would then seem that above factors may be a major disincentive to the informal sector continued membership given that the demand for in-patient services is high only for some sections of the demography typically the old 55 years and above and those of ages 0-4 years(GOK, 2014).

2.3 Influence of Premium Level on Insurance Willingness to Renew

In this section, the influence of premium level factors including the contribution mechanism on willingness to renew will be discussed. There are various factors that influence the uptake of NHIF among the informal sector and may act as enhancers or barriers. These factors include the source and amount of income, awareness and knowledge on the existence and importance of health insurance, access to paying points for the service and how one perceives their own risk in relation to the perceived benefits of the insurance products. One much importance is the knowledge on the existence and importance of health insurance which should be created to the end consumer by the service provide to which there is little in the rural parts of Kenya. Literature on the influence of affordability of NHIF, Level of income, penalties and modes of payment will be reviewed.

2.3.1 Influence of Affordability on Willingness to Renew of Health Insurance

A study on determinants of insurance uptake in Bungoma county, (Lukhale et al., 2017) showed that possession of cover increased with feelings of affordability. They found that patients who did not find the premium payment strenuous on their income were over 10-fold likelihood to possess a health insurance compared to those with a strain. Another study, found that after effecting the new premium contribution levels, for members in the national scheme from KES 160 to KES 500 was felt to be unaffordable (Barasa et al., 2017).

While this translates to about 16 Ksh per day and therefore affordable, the new rate is discriminatory and unfair as it is a flat rate rather as a proportion of the earnings. The same study observes that the rates are unproportional to the household earnings of the many of the voluntary scheme members.

The above studies contradict the one conducted in Ghana, which found that richest individuals did not pay premiums despite being well off by the contextual levels (Kotoh et al., 2018). The Survey results in the study showed that over 60% of the indigents and 65% of the well-off individuals did not pay their premiums and 70% of the well-off and 66.7% wealthiest never enrolled because of being reportedly poor. When probed, the key informants and others were not very poor by their local standards and gave additional reasons. While lack of money was the responders often cited, no money as the first reason for not paying premiums, the researchers assert, that this phenomenon, points to deeper issues such as negative traditional risk-sharing arrangements, attitudinal challenge and adverse selection.

2.3.2 Influence of Level of Income on Willingness to Renew in NHIF

A study on factors that influence non-willingness to renew of health insurance membership in Ghana (Aku, et al., 2021) showed that household earnings and household spend has a bearing on whether or not a person is will pay their premiums. Those with an earning of USD 80-160 are 0.216 times are not likely pay premiums in comparison to those whose income is less than USD 80 and those earning USD 160-320 were 0.085 times less likely not to renew in comparison to those who earn less than USD 80. A similar study in Kenya revealed that level of earnings in a household had an important influence on membership in the NHIF, with highly paid individuals (> USD 88 per month) more likely to be members compared to those of lower income (Mukhwana et al., 2015). Another study found that level of income is an important factor in NHIF participation with only 2% of the poor having enrolled compared to 24% for the non-poor. (Kimani et al., 2012).

Another concern around incomes is the mismatch between NHIF's regular monthly payments and the irregular incomes among the informal sector members. Historical reviews shows that NHIF was originally for employed civil servants and only recently included the informal sector. In their study on the voluntary members of NHIF, (Barasa, et al., 2017) researchers found NHIF had raised premiums northwards to Ksh 500 from 160 Ksh, the monthly contribution rates for voluntary scheme targets. The respondents in the study thought that the rates as disproportionate and discriminatory since it was a flat rate rather income rated and therefore out of reach for many.

2.3.3 Influence of Modes of Payment on Willingness to Renew in NHIF

The scheme's inflexible attributes creates challenges for people in the voluntary scheme, making NHIF unattractive and could major influence the lack of participation in the scheme

(Mukwhana et al., 2015). Another study found that the monthly premiums are causing difficulties for those with unstable and asymmetrical incomes and that a more agile payment conditions that aligns with seasonal incomes is a preferred option. For others, who earn by the day or week a corresponding payment schedule is preferred (Barasa et al., 2017).

Voluntary members also feel that the penalty for delayed remittance is steep and a challenge for member participation (Mukwhana et al., 2015). Many active and previous members have cited financial constraints as the key factor for defaulting on premiums and consequently the penalty is a major obstacle to renewing membership.

A study on experience of the informal sector contributors found that the payment mechanisms employed by NHIF appears to be an area of concern. According to the study, payment of premiums and modes of contribution is an obstacle to current and future members. Even though mobile payments services were introduced, they are not always dependable. Members often pay their premiums but the same does not reflect in the members (Barasa et al., 2017). Another study found that the process of using computers in to update remittances was a key barriers as most of the individuals are not technologically proficient and is a key deterrent to many would be members many potential members (Mukhwana et al., 2015).

Studies on insurance willingness to renew in Ghana has demonstrated that knowledge of the mobile phone based payment for insurance renewal affected a person's decision to renew their health insurance membership (Aku, et al., 2021). For Kenya, a country with a high mobile penetration and high utility of mobile-based payment should leverage this opportunity to expand and retain membership.

2.4 Influence of Awareness of the Fund Services on Willingness to Renew

A review of the quality of NHIF in Kenya found that awareness building of the Fund's services requires enhancement if the Fund is to continue to attract and retain members. It goes on to emphasize that this is particularly important in the informal sector where it requires a compelling brand promise to gain and retain membership (International finance corporation [IFC] et al., 2011)**.**

2.4.1 Role of Communication on Willingness to Renew

Inadequate information to the informal sector is a source of frustration to the existing members of the voluntary health schemes. Studies have found that NHIF does not communicate with impact and regularly or avail information to NHIF card holders and the citizens (Barasa et al , 2017) .They add that key gaps considered pertinent by members of the informal sector includes: information on enrolment and steps, benefits due to members, accredited service providers, renewal costs and penalties on default. NHIF members also reported inconsistencies when seeking information from the different NHIF officers, and staff.

Researchers have highlighted the sophistication in making choices of taking insurance or not among people with lower means (Oraro-Lawrence, 2020). According to experts, low value perception among the voluntary members and insufficient NHIF out of office campaigns complicates the decision to enrol into the NHIF.

2.4.2 Role of Member Education on Willingness to Renew

A recent study among county health management team in Nakuru and Nyandarua Counties found that the governance teams agreed that NHIF afforded the citizens with sufficient details on the insurance cover entitlements (Mwangi et al., 2017).

Even though studies have shown that patient, knowledge details and guidance are significant to improve overall social welfare schemes uptake. Other findings suggest that more guidance and advice exchanges among both health care workers and their customers is important towards ensuring the long-term uptake of health insurance in new regions. (Sieverding et al., 2018).

2.5 Role of Service Providers on Willingness to Renew

A study on customer retention in health insurance sector in India found that commitment and contentment of customers from the services, Creative products, low cost prices, timely services of companies, approachable employees and rapport, noticeability of services and dependability of services offered are important (Nema & Jatav, 2017).

A study on NHIF participation in Kenya found a majority of respondents were doubtful of the NHIF accredited health facilities (Mukwhana et al., 2015). Researchers have found that despite generally positive attitudes toward statutory social insurance schemes, customers in both Ghana and Kenya, did not utilize their covers because health facilities charged cash for unique treatment and drugs, or flatly declines to accept the insurance in totality. They argue that such issues erodes the confidence in the scheme and deters them from renewing their membership (Suchman, et al , 2020).

2.5.1 Role of Access to Accredited Provider Networks on Willingness to Renew

Studies have found that citizen face challenges accessing NHIF outlets (Mutinda, 2015; Namukhisa, 2014). In a study conducted in Kibera Nairobi County, knowledge of NHIF installations was positively linked with enrolment and renewal (Ochieng, 2015).

Access to existing or access to NHIF accredited health facility is a strong pull factor of NHIF willingness to renew where the existence of accredited facilities within reach strongly influences decision to register and subsequent continuity in the scheme.

2.5.2 Variation of Benefit Package

A study conducted in Makueni and Kiambu Counties found that there exists a discrepancy between the official NHIF benefit entitlement as stipulated in the guide and the real package offered to the clients (Barasa et al., 2017). Customers confided that while the NHIF benefit package on the guides are all-inclusive and enticing to them, the range of benefits provided in the health facilities were inferior and lacklustre. The above study also stated that certain services were mostly missing among NHIF accredited institutions. Such include medicines, laboratory, and radiological tests. In such situation, the NHIF members have to seek services in other non-accredited facilities and pay cash for them. Additionally, contracted health care facilities opined that the daily capitation paid by the NHIF was insufficient and therefore invoiced any variations to NHIF members.

2.5.3 Role of Equity

Studies conducted in Ghana by Kotoh et al. (2018) established that patients with health insurance ownership had and enrolled and retained their membership in the National social insurance because of a few health providers' influence. This means that health care workers in health facilities can be role models and advocates of NHIF.

A study on the reforms on the voluntary insurance sector in Kenya, established that healthcare providers treated NHIF members inequitably. They state the inequity took different forms. Clients paying money directly or those covered by commercial insurance and those in the civil servant's scheme, were more favoured in comparison to members of

the National scheme. Informal sector member belongs to the national scheme, pay lower rebates to healthcare facilities compared to the civil servant's scheme (Barasa et al., 2017). This is contrary to recommendations by global institutions that countries avoid breaking up of funding systems into parallel schemes with varying levels of payments and cover packages for unique population groups (World Health Organization [WHO], et al, 2017).

2.5.4 Role of Quality of Care on Willingness to Renew

The calibre of care provided in health institutions affects the uptake of NHIF. Studies conducted in Bungoma County, found that a break in supply chain of essential drugs and supplies and long waiting time were key deterrents to enrolment in schemes (Lukhale et al., 2017). A similar study in Tanzania has established that household's consumption of health services was positively linked to perpetual availability of essential medicines. They also found that healthcare utilization was directly correlated with household ownership of community health insurance and access to health education (August et al, 2020).

According to a study conducted in Kenya and Ghana by Sieverding et al. (2018) several service providers who successfully joined NHIF acknowledged the rigorous accreditation process was consequential to enhancements of their institutions in terms of calibre, breadth of services, and improvement to their hardware.

A study on social health insurance in Kenya and Ghana shows that there is a difference in the independence of decision-making levels between non-Governmental providers and Governmental providers on the NHIF payments. Non- governmental providers have the liberty to access and use user fees and payments from NHIF and private insurers while Government facilities had lost this autonomy (Obadha et al., 2018). While private and faith-based facilities received these payments directly. Government facilities lacked the

liberty due to the restrictions imposed on them by the Kenyan Government fiscal policies. This influenced their day-to-day working such as procurements and paying debtors, purchase of consumables and non-consumable items. Without the needed resources such facilities do not, offer quality services and deter clients from enrolling and retaining membership.

2.6 Role of Adverse Selection on NHIF Willingness to Renew

Researchers in Kenya and Ghana have found evidence indicative of adverse selection in their nation social insurance schemes (Duku et al., 2016). A large number of those insured, who consumed services, paid their monthly premiums while most of those who failed to use their insurance cover dropped out. Consequently, NHIF has been incorporated communication and marketing strategies with a view to educating the public on the benefits of NHIF (IFC et al., 2011). Both the reports from Ghana and Kenya assert that adverse-selection if unchecked, poses serious risks on sustainability of social health insurance scheme.

2.6.1 Role of Risk Perception on NHIF Willingness to Renew

Risk perception is one of the main influence of insurance uptake and the willingness stay enrolled. Evidence from Ghana revealed that those who feel healthy enrolled less and had a higher probability of not –renewing membership (Kotoh et al., 2018;Nsiah-Boateng, et al., 2019).

Researchers have found that Households with large number of dependants particularly among the indigents to be a key challenge to enrolment and willingness to renew. In Ghana for example, the social welfare, is a responsibility of close relative. Among the indigents who also have, many dependents found it difficult to pay premiums (Kotoh et al., 2018).

This contradicts a study on willingness to pay in developing countries like Kenya, which demonstrated that households with many members were motivated to pay for health insurance

2.6.2 Role of Perceived Benefits on NHIF Willingness to Renew

In many developing countries, poor households spend substantial amounts on calamitous self-payment for health care (Nosartnejad et al., 2016). Accordingly, they may be enthusiastic to pay for health insurance, if a positive expectation is fulfilled and are able provide reliable social protection against poverty from calamitous expenditures.

Reports from Kenya indicates that informal member contributors rose two fold from 1.99 million between 2015-2019 (Alushula, 2021) as result of including inpatient and outpatient benefits enabling members to enjoy service such are urinary dialysis, Cancer treatment and surgery services. Despite a rise in the number of contributors (BD, 2021), over half of the 10.6 million contributors had not paid premiums on time by end of June that year after allegedly after benefiting from NHIF services.

A comparative research on the number of new owners insurance by private sector service providers in Kenya and Ghana revealed that the main reason for subscribing was due to the pressure of their context and monetary motivation. They noted that NHIF contracting led to overall enhancements in their customer number and consequently more funds for their institutions facilities (Sieverding et al., 2018). Government and non-government, institutions generally view rebates from the NHIF, FFS (Fee for service) payments and private insurers as good sources of revenue. (Obadha et al., 2018).

2.7 Theoretical Framework

The study used the rational choice theory, Weberian model of social disaggregation and the health belief model to elucidate both personality related and environmental determinants of NHIF willingness to renew. It is important to employ the above two models and one theory to describe how the assorted variables in the survey objectives are linked to the dependent variable. The rational choice theory supported the first and fourth objective, which examined the premium level of NHIF and service provider factors, decision on continuing with health insurance cover for informal sector workers. The Weberian Model of Social stratification was employed in advancing the objective on the level of awareness of NHIF benefits and its influence on willingness to renew. The Health belief model explained the third objective on service providers in health facilities and their influence on NHIF willingness to renew.

In the following section, a description of how the researcher will employ each of the models and theories in this study.

2.7.1 Rational Choice Theory

Rational choice theory dates back centuries and were advanced by sociologists in the 1950s and 1960s (Education, 2020). These social theorists stated that the intricate trade-off between costs and rewards directs behavior. Rational choice theory has been used in this chapter to explain how individuals purchasing behavior and in social work, how individuals make decisions. The theory made the following assumptions, which are relevant for decision on health insurance purchase and subsequent payment of premiums. First is that all actions are logical and are built on consideration of costs and rewards. Secondly, is that the benefits of an association must outweigh the value for the effort to be completed.

Thirdly, is that when the cost of the prize depreciates below the worth of the costs incurred, the person stopped the effort or end the association.

These explained individual choices in purchasing and subsequent willingness to renew of insurance based on the benefits realized and importantly how their experience with health insurance institution or service providers is perceived.

2.7.2 Weberian Model of Social Stratification

According to max weber modern society and economies creates problems in the communities by creating layers based on financial considerations. These divisions are formed out of three basis namely: Possession, capability and societal status (Muiyia, 2017). This study will employ this model, which views societal divisions in the three elements of financial category, social privileges and social influences. (Pyakuryal, 2008). Each of this dimension has its own layers. Income, goods and services owned by individuals represents the economic stratification is. Prestige and honour represented the social stratifications, while the power he exercises represents the political stratification. In advancing the arguments for objective three in this study, the strata on economic and social caste are considered.

When applied to subjects, societal classification elements means that individual's economic situation greatly influences ability to access education and information materials readily through the internet, social and mass media like radio and television. This in turn enhances awareness of NHIF entitlements, provider networks and modes of payment, which are key in willingness to renew NHIF.

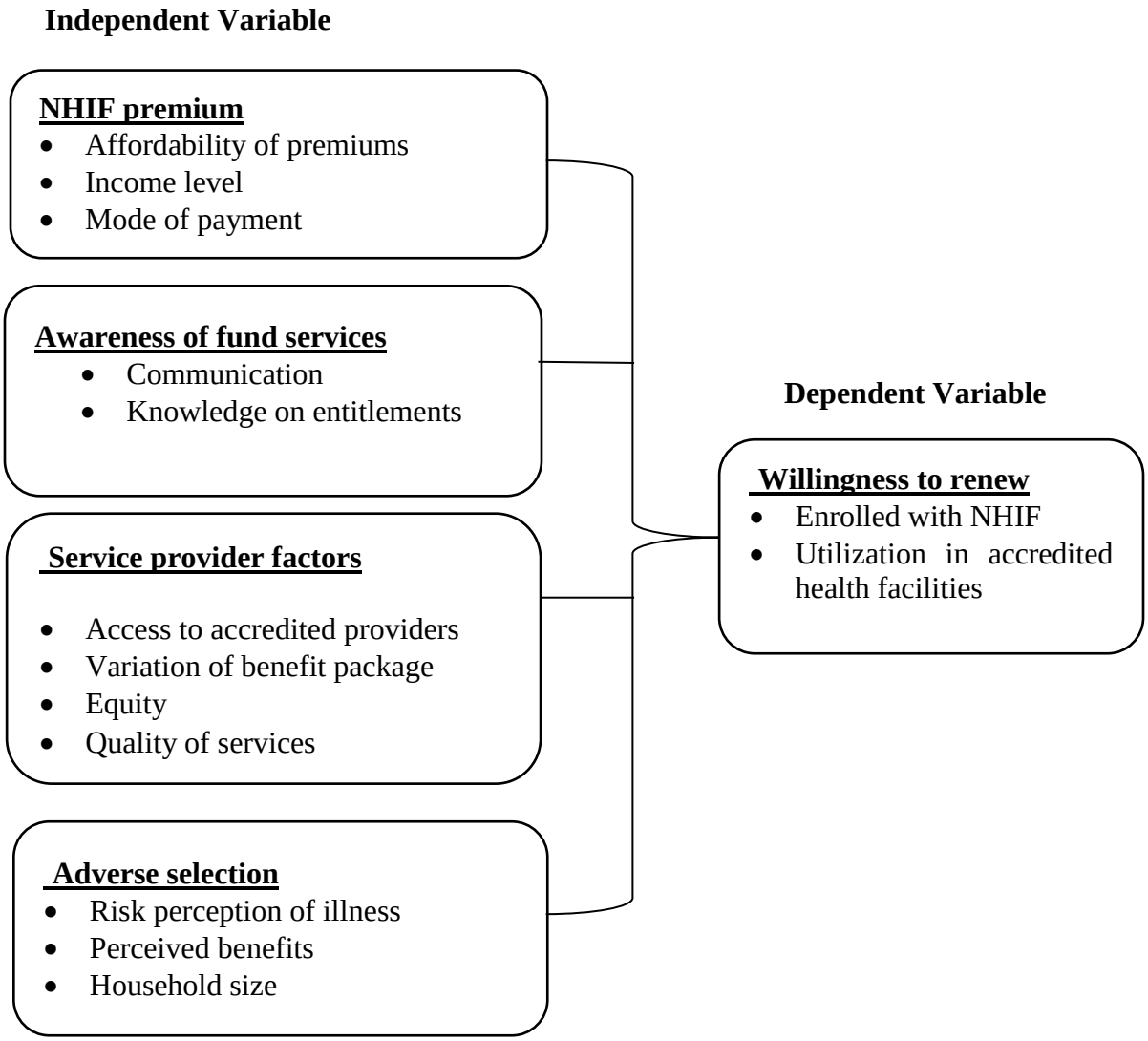
2.7.3 Health Belief Model

This model was developed by researchers studying human behavior working for the United states in the 1950s, and currently one of the most commonly applied conceptual frames of reference of health habits often employed educators of health, other health professions, and psychotherapists Rosenstock et al. (1988) as cited by (Green, et al., 2021).

These psychologists hypothesized that people dread becoming seriously ill; individual's health habits mirror both a person's anxiety level of felt health warnings and the expected distress-reduction possibility of taking action on advice provided. People think about whether the results of the habit change outweigh its real and mental barriers (Green, et al., 2021). In summary, people will gauge the net benefit of changing their habits to reduce.

Figure 2.1

Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The section provided the research architecture to be employed, target population, sample selection and sampling plan to execute. It also provided the approaches that were used to gather facts, survey instruments as well as the forms of data analysis. Importantly, it stipulates the strategies of presenting raw facts and ethical considerations to address in the course of the study.

3.2 Research Design

The researcher used a mixed methods cross sectional survey approach as it sought to provide the precise account of determinants of willingness to renew of NHIF scheme in the National scheme from the demand and supply side stakeholders. Researcher used binary logistical regression correlation to examine the strength of relationships between multiple independent variables under analysis in relation to the dependent variable (Creswell, 2014).

3.3 Target Population

The target population constituted the whole community of people to which the researcher desired to generalize their study conclusions (Nieswiadomy, 2002). In this case, the earmarked population was national scheme members of NHIF and health care providers working in NHIF accredited health facilities in Kajiado County. Kajiado County is located south West of the Nairobi city. Kajiado County has an estimated population of about 1,117,840 (560,704 Female and 557,098 Male) with about 316,179 households (Kenya National Bureau of Stastitics [KNBS], 2019). Kajiado County has six sub-counties namely Isinya, Kajiado Central, Kajiado North, Kajiado West, Loitokitok and Mashuru.

The study respondents were NHIF (Supa-cover registered) household heads who visiting NHIF office for NHIF renewal sites. Study also targeted 12 administrators and managers of the existing health facilities both private and public accredited by NHIF within Kajiado County. All the individuals that own NHIF membership, and belong to the national scheme and had defaulted on payments in the last one year within in Kajiado County were included. For the service, providers only NHIF accredited health facilities both private and public with the highest volume of clients were included.

NHIF members with membership other than the national scheme (supa cover) regardless of their membership status were excluded. For the service providers non-NHIF accredited facilities were excluded.

Table 3.1

Target population for quantitate study

Target population		**Sample Size**	
Sub county in Kajiado	**Households**	**Sub county in Kajiado Proportionate sample size (x/316,179*399)**	**NHIF Branch office/sub-county**
Isinya	71,579	91	Kitengela
Kajiado Central	37,059	47	Kajiado town
Kajiado North	101,378	128	Ongata Rongai
Kajiado West	42,774	53	Kajiado Town
Loitokitok	47,058	59	Kajiado Town
Mashuru	16152	21	Kajiado Town
Total	**316,179**	**399**	

Table 3.2

Target population for Qualitative study

Target population		**Sample Size**
Health facilities	**Sub county in Kajiado Proportionate sample size (15* 76/100= 12)**	**Sub-county**
76	4	Kitengela
	4	Ongata Rongai
	4	Kajiado
76	12	

3.4 Sample size and sampling techniques

The definite plan of obtaining a sample from a given population is sampling design (Kothari, 2004). Polansky (1995) delineates a sample as a group of subjects picked from a larger group and including less the sum total of all the subjects in that larger group. The researcher employed, purposive sampling with stratification to decide on the sample size. The appropriate sample size that was utilized in the study was calculated using The Yamane's (1978) formula as offered by Israel, (1992) was applied in determining fixed sample size from a population of 316,297. The Yamane formula is enumerated below:

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

Where: n= Sample size, N= Population size e= Level of Precision.

At 95% level of confidence and ρ=5

The study employed a confidence interval of 95% and a margin of error of 5%. In applying Yamane's formula, fixed (total) sample size was;

n=316,179 /1+316,179 (0.05^2)

n=316,179/ 1+316,179 (0.0025)

n=399 households

The calculated sample size was proportionately distributed across the various categories as illustrated (See table 3.1).

Therefore, in this study 399 Household heads were selected using purposive sampling from the clients visiting NHIF offices in Kajiado County who had defaulted on premium payments were selected. NHIF had 3 branch offices in Kajiado County (Ongata Rongai, Kitengela and Kajiado), and the sample size was distributed as follows based on the number of households: Researcher selected Kajiado County because it is among the counties with lowest NHIF coverage in Kenya ((Kipaseiyia, 2016).

The researcher used purposive sampling with stratification to identify the participating facilities from 12 facilities offering inpatient and outpatient services. According to the NHIF, there are 76 accredited in patient/outpatient health facilities, both private and public in Kajiado County as per the sample frame detailed in Appendix II. The researcher targeted at least 15 % of the sites (approximately 12 health facilities) (See table 3.2). A purposive sample of 12 managers/ administrators from each of the participating health facilities. A total of 12 individuals (5 clinicians, 4 Hospital administrators and 1 facility in-charge) from health facilities (11 private and 1 government) participated in the study.

3.5 Instrumentation

The research employed questionnaires and Key informant interview (KII) guides as the research tools. A questionnaire was an approach of gathering facts in which each individuals is interrogated to answer to the same questions on a pre-arranged outcome

(Nieswiadomy, 2002). This instrument was thought appropriate since the data was initiated first hand in these case NHIF national scheme members. An interview on the other hand is a method of obtaining responses from the subject in an eye-to eye experience or phone calls. Researcher considered interviews in order to obtain information as well as to get opinions, attitudes of health providers on NHIF's national scheme.

3.5.1 Pre-test Study

The research instruments were pretested in the neighbouring Narok County, which has similar characteristics to Kajiado County in terms of the topographic and dominant ethnic groups. The aim of pretesting tools was to aid in assurance of their potential to acquire precise facts before the real study. Authentication provided guarantees of instruments appropriateness before testing and corrective actions done to eradicate the lack of clarity that arose prior to the real survey. Moreover, the tools were applied by the study investigator as a way of assuring its' proper dispensation. For national scheme NHIF members, the questionnaire tool pre-testing was carried out on 40 respondents, among National scheme members. While three participants were interviewed to pre-test the health care worker key informant interview (KII) guide. Consistency of the responses was tested to check on whether the questions are well framed. The researcher translate the questionnaires to Kiswahili to aid in comprehension of the subject matter by the participants. Modification of questionnaire and interview schedules was conducted thereafter, to enhance validity and reliability coefficient to at least 0.7.

3.5.2 Validity and Reliability of the Instruments

The main concern of the validity of an instrument was its ability to gather the date that is intended to gather. The litmus test and standards to appraise the validity of the

questionnaire tools was through pre-validation. Thus external, predictive and content validity were considered to ensure inferential and generalization of the instrument. To assure that the instrument is valid; the questionnaire was originated with probes limiting the participants to give facts on the elements of interest to the investigation. External, predictive and content validity, were estimated by incorporating of the supervisor's views and Kaiser-Meyer-Olkin (KMO) test, which was used in adjusting the tools with the aim of realizing the intended outcomes of the study. Some questions were added and dropped based on the supervisor's views including changing the language and outlook of the tools. Validity of the Key informant interview (KII) tools was done using the respondent validation technique and though invitation of other researchers to review the tools and transcripts to avoid researcher bias.

Reliability of an instrument greatly concerned its stability and consistency and needs to be determined regardless of the type of research (Nieswiadomy Marie, 2002). In resolving measuring internal consistency and reliability, the researched employed Cronbach's Alpha approach was used to demonstrate and expound the reliability among the elements researched. The consequential α coefficient of reliability ranged from 0 to 1 in delivering the general appraisal of computing reliability (Goforth, 2016). A correlation coefficient above .70 was considered satisfactory generally, (Polit & Hungler, 1999, as cited in Nieswiadom, 2002). To assure the reliability, the research instruments were applied to all research subjects simultaneously.

For qualitative tools, the researcher collected field notes, recorded the interviews and transcribed them to digital files.

3.6 Methods of Data Collection

Household heads registered in the super-cover scheme were purposively selected after visiting the NHIF offices were approached, informed about the survey. Upon consenting, the researcher informed the respondents on the, number and duration for answering the questions before collecting data using a questionnaire with psychometric Likert of 5 (5-Strongly agree, 4-Agree, 3-Not sure, 2-Disagree, 1- Strongly disagree) based questions. The researcher-administered questionnaire was thought appropriate since the data was initiated first-hand from NHIF clients and provide opportunities to clarify questions. Telephone contacts for the study subjects were recorded for ease of feedback.

The qualitative data was gathered through key informant Interview guides with semi-structured questions administered to health care providers. At least 15 health care service providers who were either, hospital administrators, facility managers or in-charges were be purposefully selected from NHIF accredited facilities with high workload. Key informant interviews were selected because it provides factual data about people and to measure their points of view, outlook, and confidence about certain topics (Nieswiadomy, 2002).

3.7 Operational Definition of Variables

Table 3.3

Operational description of variables

Objectives	**Type of variable**	**indicators**	**Type of data**	**Analysis techniques**
Influence of premium level on willingness to renew.	**Independent**	Affordability	**nominal**	Descriptive Inferential
		Income level	**ordinal**	
		Payment modality	**nominal**	Descriptive Inferential
		Affordability of penalty	**nominal**	Descriptive Inferential
Influence of awareness of NHIF benefits on willingness to renew	**Independent**	Provider networks	**nominal**	descriptive Inferential
		Benefit entitlement	**nominal**	Descriptive Inferential
		Willingness to renew procedures	**nominal**	
Influence of service providers on willingness to renew	**Independent**	Equity	**nominal**	Descriptive inferential
		Variation of benefit package and actual service	**nominal**	
		Quality of services	**nominal**	
influence of adverse selection on willingness to renew	**Independent**	Risk perception	**nominal**	Descriptive Inferential
		Perceived benefits	**nominal**	
Willingness to renew in National scheme(NHIF)	**Dependent variable**	Enrolment status	**nominal**	Descriptive Inferential
		Utilization	**nominal** **ordinal**	

3.8 Data Analysis and Presentation

Data input was done in Microsoft Excel 2016 version. Data was exported to SPSS version 26 for cleaning, coding and analysis. At univariate analysis, respondents' socio-demographic characteristics, which were categorical data, were summarised in form of frequencies and percentages. Data on the four main proposed determinants: premium level, awareness of NHIF fund services, service providers role and the effect of adverse selection on willingness to renew insurance cover were measured using a 5-point Likert scale that ranged from 1=Strongly Disagree (SD), 2=Disagree (D), 3=Undecided (U), 4=Agree (A) and 5=Strongly Agree (SA). Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) tests of normality were computed to determine which descriptive statistics and analysis to follow for the factors influencing willingness to renew the insurance covers based on the distribution of the data. For each of the four determinants, we summed the scores of a given respondent and a median score of items per each of the four determinants: premium level (5 items), awareness of NHIF fund services (6 items), service provider's role (9 items) and the effect of adverse selection on willingness to renew (4 items) were calculated as data was non-normally distributed. The minimum median score per item was 1 and a maximum of 5. Interquartile ranges were also reported.

We categorised/dichotomized willingness to renew the insurance cover into willing: Due to the nature of asymmetrical data, if the participant scored above the median value (3.86) of willingness to renew measuring questions or unwilling: if the participant scored under the median value on willingness to renew measuring questions.

Determinants for willingness to renew insurance cover were recognized by applying binary logistic regression model. Bivariate logistic regression analysis was performed for association between each independent variable and the willingness to renew the insurance cover. A multivariable logistic regression analysis was performed to determine the significant determinants for the willingness to renew the insurance cover. The association was spelt-out using the adjusted odds ratio (AOR) and a 95% confidence interval (CI). Multicollinearity was checked using a variance inflation factor (>10) using the collinearity diagnostic function in SPSS. The goodness of fit was examined by applying the Hosmer-Lemeshow test (>0.05). Statistical significance was placed at $p< 0.05$. All quantitative results were presented in tables. Categorical data was analysed through discourse analysis and guided by the four objectives. 11 of the 12 interviews were audio recorded and summary notes taken; audio files were transcribed word for word. One interview was not audio-taped due to none approval by the participant and instead comprehensive were written down on a note book. Data was eventually analysed based on the research questions and the espoused opinions. Researcher grouped related themes together and triangulated them to strengthen the quantitative findings. Categorical data was presented by utilizing directs quotes.

3.9 Ethical Consideration

The permission to conduct the research was approved by KeMU Scientific Ethical Research Committee (SERC) (approval number KeMU/SERC/HSM/2/2022) and a research license to conduct the research was obtained from the national commission for science, technology and innovation (NACOSTI) (license number NACOSTI/P/22/15653).. The researcher also sought and presentation letter from the University addressed to Kajiado

County director for health to enable the researcher to undertake the study. The County Director for Health Kajiado County was approached to issue a letter approving of the study. Confidentiality and privacy of the information extracted from study subjects were guaranteed by de-identifying personal data on the survey instruments. Written concurrence was obtained from the subjects after detailed explaining of the purpose of survey and that taking part in the survey was discretionary. Completed forms were secured under lock and key and only accessible to the researcher.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This section covered data analysis, results interpretation and discussion of findings. The findings were presented in light of the theoretical framework and within the literature review. In the discussion of findings, the researcher discussed aspects that were in agreement and those that were not in agreement with previous research. The researcher also reported the study limitations.

4.2 Pre-test results

Data regarding the factors that determine willingness to renew in the NHIF's National scheme (supa cover) members in Kajiado given the importance of social insurance cover in ensuring equitable access to quality health care. Pre-testing was done in checking the reliability and validity of the main instrument in advance of the actual survey. The respondents identified for the pre-test study were not be engaged into the main study to overcome bias. For national scheme NHIF members, the questionnaire tool pre-testing was carried out on 40 respondents, among National scheme members in Narok County and who match sample size of 10%. For the key informant interviews, 3 facility administrators were engaged. After the pre-test study, the questionnaire and KII's were edited for completeness and consistency. 40 questionnaires and 3 KII's were issued to the respondents and every single one completed and returned, equating to 100% feedback (see table 4.1).

Table 4.1

Pre-test Study

Response	Frequency	KII	Percentage
Returned	40	3	100%
Unreturned	0	0	0%
Total	40	3	100%

4.2.1 Validity

Borsboom et al. (2004) contemplates validity as the extent that examined scores are associated to a standard external to the test. Roberts and Priest, (2006) observes that the extent to which a survey tool estimates an element to accuracy is validity, which is the exact depiction of the extracted facts to the theoretical notion. The supervisor's opinion and the Kaiser-Meyer-Olkin (KMO) test encompassed with the Bartlett's test of Sphericity were conducted to examine validity.

In this way, assorted types of validity including construct, discriminant and convergent validity were checked. Construct validity depicts the extent to which the survey tool is estimating the selected construct (Messick, 1987). Further Varimax approaches and also principal component analysis was employed to present those elements that distinctly appraises the variables being researched. Principle element analysis and varimax rotation technique were conducted by applying Eigen values larger than or equal to 0.5. Factors with Eigen values greater than (1) were derived and items with elements loading with greater or equal 0.5 were retained. A KMO sampling adequacy value of less than 0.5 indicates that the questions depicting a variable are not valid. Moreover, the Bartlett's test of Sphericity should be significant at $p \leq 0.05$ to guarantee validity.

Table 4.2

Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity Results

Variable	Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-Square	Degrees of freedom	p-value
Premium level	0.541	128.550	15	0.000
Awareness of NHIF	0.833	425.974	15	0.000
Service Providers	0.795	235.857	15	0.000
Adverse Selection	0.548	99.959	15	0.000
Willingness to renew	0.730	300.305	15	0.000

Table 4.2, shows that the loading of KMO for all the variables (constructs) were above a least threshold of 0.5; Premium level= 0.541, Awareness of NHIF = 0.833, Service Providers = 0.795, adverse selection= 0.548, willingness to renew = 0.730. This depicts that the number of elements for each constructs (variable) were adequate to measure the target variables. The Chi-square test outcomes for Bartlett's Test of Sphericity were all established as significant; [χ^2 (10) =128.550, $p=0.000 < 0.05$] for premium level, [χ^2 (35) = 425.974, $p=0.000 < 0.05$] for awareness of NHIF, [χ^2 (28) = 235.857, $p=0.000 < 0.05$] for service providers, [χ^2 (10) = 99.959, $p=0.000 < 0.05$] for adverse selection and [χ^2 (45) = 300.305, $p=0.000 < 0.05$] for willingness to renew; this indicated that the sampled items for each variable were from a population with equal variance.

Validity of the Key informant interview (KII) tools was done using the respondent validation technique and through invitation of other researchers to review the tools and transcripts to avoid researcher bias.

Cronbach's alpha $\propto$ assessed the reliability coefficient of the survey tool as all elements in the questionnaire used a Likert type scale as the measurement. Cronbach (1951) described coefficient alpha as a test representing questionnaire reliability estimate. Bartko and

Carpenter, (1976) notes that Cronbach's alpha values range between 0.7 and 0.9, with 0.8 as the most preferred, while those below 0.7 indicates low internal consistency. Table 4.3, presents the summary reliability of the study.

Table 4.3

Reliability Test Results

Variables (Constructs)	**Number of items**	**Cronbach Alpha**
Premium level	5	0.900
Awareness of NHIF	6	0.781
Service Providers	9	0.818
Adverse Selection	4	0.778
Willingness to renew	7	0.885
Overall	**31**	**0.832**

Table 4.3, results, clearly shows that Cronbach alpha coefficients for all the variables were above the minimum threshold of 0.7 (Brown, 2002)*;* premium level was 0.900; awareness of NHIF was 0.781; service providers was 0.818; adverse selection was 0.778 and willingness to renew was 0.885. Therefore, our pre-test inferred that the 5-point Likert of the elements used to measure the study variables was reliable and acceptable for further appraisal.

For qualitative tools, the researcher collected field notes, recorded the interviews and transcribed them to digital files to ensure reliability.

4.3 Response Rate

A total of 399 questionnaires and 12 KII's were administered to NHIF supa-cover members and health facility executives and managers respectively and only 394 questionnaires and

12 KII were completely and adequately filled for inclusion in this study. This represented 98.7% and 100% response rate respectively, which was adequate to allow analysis.

4.4 Socio-Demographic Characteristics

Table 4.4

Socio-demographic characteristics of the participants

Characteristic	Category	Total (N=394)	Percentage (%)
Gender	Male	266	67.5
	Female	128	32.5
Age (years)	18-25	11	2.8
	26-35	53	13.5
	36-45	134	34.0
	46+	196	49.7
Marital status	Separated	98	24.9
	Married	200	50.8
	Single	69	17.5
	Divorced	27	6.9
Household size	1-2	36	9.1
	3-5 pax	234	59.4
	6+	124	31.5
Children below 18yrs in HH	1-3	43	10.9
	4-6	221	56.1
	7 and above	130	33.0
When first registered as NHIF supa cover member	<6 months	70	17.8
	7 - 12 months	172	43.7
	12 - 18 months	112	28.4
	>18 months	40	10.2
Have other cover other than NHIF	No	305	77.4
	Yes	89	22.6
Source of income	Salaried	244	61.9
	Entrepreneur	119	30.2
	Casual	31	7.9
How do you frequently receive income?	Daily	63	16.0
	Weekly	222	56.3
	Monthly	109	27.7
Household income per month (KSH)	<5000	54	13.7
	5001 - 15000	193	49.0
	15001 - 30000	147	37.3

4.4.1 Gender and Age

Determining the gender and age of respondents were a key aim of this study. The results presented (see table 4.4) shows that two-thirds of the participants were male with half of the total participants being 46 years and above (N=196, 49.7%). A majority of the respondents were male and this is consistent with studies conducted by Nsiah-Boateng, et al (2019) which found that male informal sector employees of older than 18 years or male indigent was significantly associated with insurance willingness to renew.

4.4.2 Marital Status

Respondent's marital status was required in this study. Table 4.4, outcomes, shows that the half of the participants were married (N=200, 50.8%).This concurs with studies by Kimani et al (2014) which found a strong association showed that being married has a relationship with having health insurance coverage in comparison to those never married and previously married.

4.4.3 Household Size

The study further aimed at establishing household size, number of dependants. The results presented in (See table 4.4) shows that most of the participants (N=358, 90.9%) were living in households with over 3 members and 351, 89.1% of the households had over four children below the age of 18 years. This finding is consistent with other studies conducted in Ghana and Kenya among the indigents with many dependents and found it difficult to pay premiums (Kazungu & Barasa, 2017; Kiplagat, 2011; Kotoh, et al 2018). Low willingness to renew of households with large family size means that a high number of individuals do not have cover and that means they are more likely to pay out of pocket for health services (catastrophic spend) and this could drive them into poverty.

4.4.4 Duration from 1st Registration

The paper aimed at establishing the respondents duration form 1st registration. The results presented in (See table 4.4) shows that respondents who had registered over 18 months ago were unlikely to retain their health insurance in comparison to those who registered less than 12 months ago. The older members may be demotivated due to lack of benefit as they do not use their insurance cover and therefore a disincentive and therefore likely to default on premiums. This behavior reflects on the rational choice theory 3rd assumption, that when the cost of the prize depreciates to low levels, the worth of the expenditure, the person will discontinue or terminate relationship.

4.4.5 Alternative Insurance Cover

Respondent's ownership of alternative insurance cover was required for this study. Findings presented (see table 4.4) above shows that over three-quarters (N=305, 77.4%) had no alternative insurance cover other than NHIF. This finding demonstrates that informal sector members are dependent on NHIF national cover to access medical care. This finding is consistent with findings in a study, which found that 88.4% of persons with other form of health cover are also owned NHIF cover (Barasa, et al, 2017).

4.4.6 Income Level

Determining income sources, level and frequency was critical in this study. Findings presented (see table 4.4), indicates that 6 of the participants were salaried (N=244, 61.9%) with most of them earning weekly wages (N=222, 56.3%). About half of the participants earned between Ksh. 5,001 – 15,000 (N=193, 49.0%).This findings shows that respondents are from low income groups. This is consistent with a study done in Ghana where individuals with relatively high income were unlikely to pay for insurance as compared to

the low- income earners (Kiplagat, 2011; Kotoh et al ., 2018). However, our finding differs with studies conducted in Ghana and Kenya respectively that found that households with larger incomes would more possibly pay for cover (Aku, et al., 2021; Kazungu & Barasa 2017; Mukhwana et al., 2015). This may be due to the fact that respondents with higher income may feel more secure and able to pay out-of-pocket compared to the low-income earners who perceive themselves as more vulnerable. The fact that a majority of the respondents receive their salaries on a weekly basis represents a mismatch with the monthly premium payments by NHIF supa cover. This is consistent with other studiers which found that the monthly premiums are causing difficulties for those with unstable and asymmetrical incomes and that a more agile payment conditions that aligns with seasonal incomes is a preferred option. The scheme's rigid attributes is unattractive and could major influence the lack of participation in the scheme (Barasa et al, 2017; and Mukwhana et al., 2015). This finding demonstrates that inequities persist in health insurance mechanisms. Those from low socio-economic status are willing to voluntarily contribute to their health covers compared to their higher counterparts, who probably feel secure and can afford to pay out-of-pocket health care costs.

4.5 Descriptive Analysis of Determinants of Willingness to Renew

4.5.1 Normality Tests of the Independent Determinants of Willingness to Renew

To determine which descriptive statistics and model to use for inferential statistics, the Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) tests of normality were carried out to show whether data was normally distributed. Table 4.5, shows the significant p-values of both tests ($p<0.000$), all the socio-demographic characteristics, premium level, awareness of NHIF services, service providers on willingness to renew and adverse section on

willingness to renew and the overall willingness to renew data significantly deviated from a normal distribution. If the significance value (p-value) of the SW and KS tests is greater than 0.05, the data is normally distributed, and the reverse is true for non-normal distributed data.

Table 4.5

Tests for normality of data

	Kolmogorov-Smirnov			**Shapiro-Wilk**		
Characteristic	Statistic	df	p-value	Statistic	df	p-value
Gender	0.431	394	0.000	0.590	394	0.000
Age	0.302	394	0.000	0.773	394	0.000
Marital status	0.287	394	0.000	0.837	394	0.000
Household size	0.331	394	0.000	0.757	394	0.000
Children <18 years in household	0.308	394	0.000	0.772	394	0.000
Household income per month	0.264	394	0.000	0.787	394	0.000
Premium level	0.116	394	0.000	0.924	394	0.000
Awareness of NHIF services	0.113	394	0.000	0.941	394	0.000
Service providers on willingness to renew	0.112	394	0.000	0.969	394	0.000
Adverse selection on willingness to renew	0.147	394	0.000	0.928	394	0.000
Willingness to renew	0.128	394	0.000	0.960	394	0.000

4.5.2 Influence of Premium Level on Willingness to Renew

Establishing the influence of premium level on willingness to renew the NHIF among members of the national scheme members of Kajiado County was the first objective of the study. A 5-point Likert scale ranging from 1-5 (1=strongly disagree, 2 = disagree,

3=neutral, 4=agree and 5=strongly agree) was used. Median scores and inter-quartile ranges (IQR) were reported as the data was non-normally distributed. The overall median score for the premium level on willingness was 3.8 (IQR 2) and the specific items had a higher median score thanks to the overall category score. This means that a larger part of the study participants opined that the current NHIF premiums were affordable (median 4.00, IQR 2.00), modes of payment were easy (median 5.00, IQR 2.00), premium payment were flexible (median 4.00, IQR 2.00), monthly frequency of payment appropriate (median 4.00, IQR 2.00) and were comfortable with the penalties on default (median 4.00, IQR 2.00). Table 4.6 shows the ratings of the different components by the respondents.

Table 4.6

Ratings of the premium level

Premium level	**Median**	**IQR**
The current NHIF premiums is affordable to me	4.00	2.00
The current modes of paying premiums are easy	5.00	2.00
I find premium payment to be flexible	4.00	2.00
The monthly frequency of premium payment is appropriate	4.00	2.00
Penalties on default is comfortable for me	4.00	2.00
Overall	3.80	1.00

Service providers disagreed with this finding:

> *500 is too much for a whole income. They should categorize for some people like farmers because they pay using Safaricom Mpesa and that includes a transaction fee making it too much for them. People who are employed get a deduction yet they get the Supa cover. It is not fair. Because of the needs of the people. The needs are too much and they have little money. The premiums should be reduced to 300 or 350. Plus the premiums should not be equal, they should be different for the civil servants, employed individuals and self-employed individuals… (Health administrator II Kajiado County).*

Evidence from previous studies in Kenya and Ethiopia show that affordability and contribution mechanism of premium payments for NHIF easily portends an economic bottlenecks to existing and future members from registration and willingness to renew of insurance covers (Barasa et al., 2017; Gidey et al., 2019; Mbau et al., 2020). Therefore, for future success in enrolment and willingness to renew of the insurance covers, improving the affordability and frequency of premiums payments using easy modes of payment with flexible premium rates are required to the general public.

4.5.3 Awareness of NHIF fund Services and Willingness to Renew

The second question of the survey was to assess the influence of awareness on the willingness to renew the insurance scheme among Kajiado County residents. Overall, a median score of 3.50 (IQR 1.33) was reported for the category.

Table 4.7

Ratings for awareness of NHIF fund services

Awareness statement	Median	IQR
I understand the renewal procedure of membership of NHIF when it expires	5.00	2.00
I often receive communication from NHIF about super cover benefits	3.00	2.00
I know the NHIF accredited health facilities to go to when I need service.	4.00	0.00
I have been educated on NHIF supa cover benefits	1.00	4.00
I am often aware that NHIF will pay for my visits to a health facility.	5.00	2.00
I know I can get treatment overseas with the supa cover package	4.00	3.00
Overall	3.50	1.33

Table 4.7 shows that a large portion of the respondents agreed that they understood the renewal procedure of membership when it expires (median 5.00, IQR 2.00) and were always aware that the insurance will pay their visits at the health facility (median 5.00, IQR 2.00). Similarly, participants were aware of the accredited health facilities to seek care from in-country (median 4.00, IQR 0) and also were aware that they could get treatment overseas with the supa cover package (median 4.00, IQR 3.00) However, respondents disagreed on whether they receive communication from NHIF about super cover benefits (median 3.00, IQR 2.00) or have been educated on NHIF supa cover benefits (median 1.00, IQR 4.00). This implies that although there is good awareness among residents on costs being covered by the insurance at the facility and renewal of the expired covers, insurance companies need to expand their communication strategy to include information on the benefits accruing from registering and retaining the insurance cover to the residents for achievement of UHC. Our findings are similar to the study in Kenya by Barasa and colleagues who reported that NHIF member felt that they received sub-optimal information about the benefit entitlements, fluctuating and at odds messages by the NHIF and also divergence between the on paper benefits and the real benefits given to the members (Barasa et al., 2017). In addition, studies Kenya and India showed that individuals who were exposed to media had high awareness of health insurance and increased chances of enrolment and renewal of an insurance cover (Indumathi, et al., 2016; Kazungu & Barasa, 2017). Although our study showed high knowledge of health covers, a lot needs alarming need to be enhanced in the understanding about health insurance advantages in the rural communities. This finding is buttressed service providers in Kajiado who opine that;

> *They don't know the importance of paying for the NHIF and also lack of awareness some wonder why they should continue paying and they are not getting sick so they feel it's a waste of money.… (Hospital administrator I Kajiado).*

4.5.4 Influence of Service Providers on Willingness to Renew

The third objective of the study was to establish the influence of service providers on the willingness to renew the insurance scheme among Kajiado County residents. A 5-point Likert scale ranging from 1-5 (1=strongly disagree, 2 = disagree, 3=neutral, 4=agree and 5=strongly agree) was used. Medians and IQRs were reported.

Table 4.8

Ratings on service providers

Service provider statement	Median	IQR
I am confident that my card will be accepted as a mode of payment in an accredited health facility	5.00	1.00
NHIF accredited health facilities are available within 10 Kms of my residence	4.00	2.00
I receive most of the health services under the super-cover in the accredited health facilities	5.00	1.00
NHIF card holders are treated with courtesy	3.00	2.00
I would like to enrol for the other NHIF covers but I am not allowed to	3.00	2.00
The services in the NHIF guidelines match what I receive in the facilities.	1.00	4.00
The waiting time is comfortable for me in the accredited health facilities	5.00	2.00
I am confident of receiving satisfactory services in accredited health facilities	3.00	2.00
I often receive all drugs prescribed in the accredited health facilities	3.00	3.00
Overall	3.67	1.00

Overall, respondents believed service provider factors played a major role in influencing their willingness to renew the insurance covers (median 3.67, IQR 1.00). Respondents were satisfied that their cards were accepted as modes of payment (median 5.00, IQR 1.00), received most of the services in the accredited health facilities (median 5.00, IQR 1.00), and were comfortable with the waiting time (median 5.00, IQR 2.00). However, a larger number of participants were not satisfied with as services in the NHIF guidelines did not

match what they receive in the facilities (median 1.00, IQR 4.00). On average, there was good satisfaction that respondents were treated with courtesy (median 3.00, IQR 2.00), received satisfactory services in accredited health facilities (median 3.00, IQR 2.00), and often received drugs prescribed in the accredited health facilities (median 3.00, IQR 3.00). This finding is buttressed with health service providers as below statements:

> *The challenges we face at the facility are; first, explaining to the patient why their cover cannot cater for some services such as an endoscopy test which is expensive and the supa cover doesn't cater for its costs. Secondly, accessing some medical personnel for specialized treatment is difficult because the supa cover does not have that benefit so it requires that one pays using his or her cash and if they can't afford they just have to leave unattended. Thirdly, explaining to the patients that the supa cover cannot cater for some drugs is also a challenge.… (Clinician I Kajiado).*

> *As I mentioned before, the knowledge I have about the contract between the hospital and NHIF, the amount we get after offering service to the patient is a loss to the hospital and so we have to consider services offered and make decision so that the hospital does not incur losses and so what we do is to lower down the services for supa cover patient. When a supa cover patient comes their services are limited and so you have to refer a patient if they cannot pay for a service.… (Clinical officer, Kajiado)*

> *The civil servant scheme is better and they get better cover compared to the Supa cover members. The supa cover members pay more to NHIF compared to civil servants especially those who are employed and they don't benefit. It is discriminative because civil servants get more services than supa cover. The challenge we face is that some patients come here yet it is not their registered hospital so it becomes hard offering services to them.… (Health administrator, II Kajiado)*

Our findings are similar to a study in Ethiopia which showed that insurance offering and low calibre of health services were significant elements impacting their willingness to pay for their insurance covers (Gidey et al., 2019). Besides, our findings agree with the study Mbau and colleagues which demonstrated that new provider payment methods improved the efficiency in financial transactions with insurance covers and quality of healthcare delivery (Mbau et al., 2020). However, the mismatch between services indicated in the

NHIF guidelines and the accredited health facilities shows that there is need to strengthen responsible modalities linking insurance and service provider institutions to ascertain that active subscribers receive the envisaged medical service packages that are due to them and their encounters at health facilities are good enough, findings which were emphasized in a study in Kenya (Barasa et al., 2017).

4.5.5 Influence of Adverse Selection on Willingness to Renew Insurance

The fourth objective was to determine the influence of adverse selection on willingness to renew insurance cover among national scheme members of Kajiado County. Similar to the previous objectives, mean scores were computed from a Likert scale ranging from 1-5 (See table 4.9).

Table 4.9

Ratings of adverse selection

Adverse selection statement	Median	IQR
I currently need a health service immediately	4.00	2.00
Stop NHIF after I get the health services	5.00	2.00
In my household I have individual/s who need urgent health services	4.00	2.00
I consider myself a healthy individual	4.00	2.00
Overall	3.75	1.00

Respondents reported that adverse selection had an influence on willingness to renew with a median score of 3.75, IQR 1.00. Respondents believed they needed a health service immediately (median 4.00, IQR 2.00), would stop NHIF once they get the health services (median 5.00, IQR 2.00), had individuals who need urgent health services (median 4.00,

IQR 2.00) and they considered themselves as healthy (median 4.00, IQR 2.00). Respondents report an increased likelihood of renewal of insurance cover because they need health services and/or have an individual who need the health services. This finding is similar to the study conducted in Ghana showed that renewal of insurance was more likely for those who used healthcare services than those who did not and also increased for those who frequent that health institutions (Duku, et al 2016).

4.5.6 Willingness to Renew NHIF Cover

To assess willingness to renew insurance cover, a 5-point Likert scale ranging from 1-5 (1=strongly disagree, 2 = disagree, 3=neutral, 4=agree and 5=strongly agree) was used. Median scores and IQR are presented (See table 4.10).

Table 4.10

Ratings on willingness to renew NHIF

Statement	Median	IQR
I am willing to continue with NHIF payments due to its benefits	5	2
I would reconsider enrolling with the NHIF if I knew all the NHIF cover benefits	5	1
I would enrol for the NHIF cover if my dependents were all covered	4	2
If the NHIF accredited providers would provide quality services I would enrol for it	5	1
I would renew the NHIF cover if there more NHIF accredited facilities near me	4	3
I would renew the membership if NHIF was offering services for chronic diseases	2	1
I would renew my membership if NHIF membership covered Inpatient services	5	1
Overall	3.86	0.75

Overall, respondents showed high willingness to continue paying the insurance premiums and renew their insurance covers for health services (median 3.86, IQR 0.75). Respondents were willing to enrol and renew their covers with NHIF if they knew the cover benefits (median 5.00, IQR 1.00), continue with payments largely if the costs of inpatient services are covered (median 5.00, IQR 1.00), if they would receive quality health services (median 5.00, IQR 1.00) and also continue with NHIF payments due to the benefits (median 5.00, IQR 2.00). As evidenced in previous studies, one will largely renew their insurance cover if the premiums are affordable, understands the benefits expected from the cover, is guaranteed of quality health services at the health facilities for self and his dependants (Barasa et al., 2017; Duku et al., 2016; Gidey et al., 2019; Indumathi et al., 2016; Kazungu & Barasa, 2017; Mbau et al., 2020). This is in agreement with service providers opinions as below:

> *In terms of the scheme, we have three, we have the capitation, the MPS and the comprehensive cover. So you find out that the ones that are using capitation, that cover is not good. In terms of the limit per visit, to a hospital, is usually limited so their cover is extra limited.You find that in a month, they offer like 1000 shillings for an individual and it's supposed to cater for a whole month. It is difficult especially when we get patients with chronic conditions ones they are treated it is very difficult for them to come back for treatment within the same month.… (Clinician II, Kajiado)*

> *Not many facilities offer NHIF supa cover because they prefer the civil servant ones. Another reason is ignorance and forgetfulness. 500 is a lot of money for people who are struggling to make ends meet and thus they fail to pay their monthly premiums. … Clinical office II, Kajiado)*

> *I feel like in terms of capitation, because we deal more with the capitation patients at least if they can increase the limit per visit in a facility for the patient it will be much better, they should not limit it to 1000 shillings because even right now in terms of the diseases and finance it is not practical. At least they should try to increase the limit so that by the end of the day we benefit because we are around 46 million people in the country so at the end of the day all of us will be required to pay the 500 shillings and not all of us will look for treatment so at least if they can increase the amount remitted it will help…. (Clinician II, Kajiado)*

4.6 Bivariate Analysis

A binary logistic regression analysis to show the relationship between each of the independent variables/determinants (socio-demographics, premium level, awareness of NHIF services, service providers' factors and adverse selection) and the dependent variable (willingness to renew the insurance cover) was conducted(Appendix IV) P-values (showing significance of relationship), odds ratios (showing the strength of the relationship between independent determinant and willingness to renew) were reported and summarised in the Appendix IV. From the bivariate analysis, males were 3.8 times more likely to renew their insurance compared to females (OR=3.8, $p<0.001$). Singles were 62% less likely to renew compared to the marrieds (OR=0.38, $p=0.003$). Households with 1-2 people were more willing to renew compared to those with 3-5 (OR=0.15, $p<0.001$) or 6 and more people (OR=0.21, $p=0.001$). For the covariates, for every unit increase in premium level, the odds of willingness to renew increased by 2.3 times (OR=2.28, $p<0.001$). For every unit increase in awareness of NHIF fund services, the odds of willingness to renew increased by 3.9 times (OR=3.89, $p<0.001$). A unit increase in service providers factors scores increased the odds of willingness to renew by 6.1 times (OR=6.06, $p<0.001$), making it the largest determinant for willingness to renew. For every unit increase on adverse selection category, the odds of willingness to renew increased by 2.2 times (OR=2.18, $p<0.001$). However, age, number of children less than 18 years in household and household income per month were not statistically significant factors to determine the willingness to renew the insurance cover ($p>0.05$).

4.7 Multivariate Analysis

A multivariate binary logistic regression model was performed to determine whether the independent variables (socio-demographics, premium level, awareness of NHIF services, service provider's factors and adverse selection on willingness to renew) were determinants

of the dependent variable (willingness to renew the insurance cover). This included the model's goodness of fit using the Hosmer and Lemeshow test in SPSS 26.

4.7.1 Multicollinearity Testing

All the independent variables were tested for multicollinearity using the collinearity diagnostics function in SPSS. Factors with a variance inflation factor (VIF) of more than 10, which show multicollinearity, were removed from the model starting with the worst factor with the highest VIF value. Model 1 on table 4.11 shows that premium level, with a VIF of 180.1 in the model, had the highest VIF thus the worst offender in the model. Upon removing it, the remaining independent variables all had the recommended VIF less than 10 (Model 2) (See table 4.12) and were progressed to the multivariate binary logistic regression.

Table 4.11

Model 1 (all independent variables)

		Collinearity Statistics	
Model	Sig.	Tolerance	VIF
(Constant)	0.955		
Gender	0.002	0.263	3.802
Age	0.000	0.680	1.470
Marital status	0.132	0.684	1.463
Household size	0.243	0.717	1.394
Children <18 years per household	0.000	0.875	1.143
Household income per month (KSh)	0.216	0.618	1.619
Premium level	0.006	0.006	**180.100**
Awareness of NHIF fund services	0.460	0.213	4.696
Service Providers on willingness to renew	0.000	0.197	5.072
Adverse selection on willingness to renew	0.002	0.007	**153.043**

Table 4.12

Model two (all independent variables minus Premium level)

Model		Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	0.047		
	Gender	0.011	0.282	3.552
	Age	0.000	0.685	1.461
	Marital status	0.130	0.684	1.463
	Household size	0.207	0.718	1.392
	Children <18 years per household	0.000	0.875	1.142
	Household income per month (KSh)	0.065	0.646	1.547
	Awareness of NHIF fund services	0.966	0.231	4.323
	Service Providers on willingness to renew	0.000	0.236	4.238
	Adverse selection on willingness to renew	0.011	0.313	3.193

4.7.2 Goodness of Fit of the Model

The model summary showed good and acceptable Nagelkerke R-square value of 0.775 closer to the maximum 1. This is the adjusted Cox & Snell R-square value which measures the proportion of the total variation of the dependent variable that can be explained by independent variables in the current model.

Table 4.13

Model Summary

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	202.818[a]	0.581	0.775

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Hosmer and Lemeshow test with a chi-square value of 8.854 and p=0.355 was not significant, depicting the model as a good fit to explain the accuracy of the model to correctly predict whether the addition of independent variables improved the model to predict the dependent variable.

Table 4.14

Hosmer and Lemeshow Test

Hosmer and Lemeshow Test			
Step	Chi-square	df	Sig.
1	8.854	8	0.355

Accuracy of model used with all the independent variables included to correctly predict whether they were associated with the willingness to renew their insurance covers was good at 89.3%.

Table 4.15

Classification Table

Classification Table[a]					
			Predicted Willingness to renew		
	Observed		1	2	Percentage Correct
Step 1	Willingness to renew	1	176	26	87.1
		2	16	176	91.7
	Overall Percentage				89.3

a. The cut value is .500

The study findings show that controlling for all factors (or holding all factors at zero); marital status, household size, household income per month, awareness of NHIF fund services, service providers and adverse selection on willingness to renew were significant determinants of willingness to renew the insurance cover.

Table 4.16

Multivariate Analysis

	Categories	P-value	AOR	95% C.I.	
				Lower	Upper
Constant		0.998	0.000		
Gender	Male (ref)				
	Female	0.140	5.797	0.562	59.779
Age (years)	18-25 (ref)				
	26-35	0.999	0.000	0.000	
	36-45	1.000	0.000	0.000	
	46+	1.000	0.014	0.000	
Marital status	Separated (ref)				
	Married	**0.005**	15.6	2.3	106.4
	Single	0.907	0.911	0.191	4.346
	Divorced	0.070	235.480	0.634	87408.199
Household size	1-2 people (ref)				
	3-5 people	**0.001**	57.2	4.9	661.0
	6+	**0.004**	15.8	2.5	102.3
Children below 18yrs in HH	1-3 children (ref)				
	4-6 children	0.997	13364749096.2	0.000	
	7 and above	0.996	1518214160164.7	0.000	
Household income per month (KSh)	<5000 (ref)				
	5001 - 15000	**0.000**	0.009	0.001	0.056
	15001 - 30000	**0.001**	0.028	0.004	0.213
Awareness of NHIF fund services		**<0.001**	13.2	3.1	55.5
Service providers on willingness to renew		**<0.001**	109.0	14.8	803.8
Adverse selection on willingness to renew		**<0.001**	0.043	0.009	0.202

Marital status was significantly associated with willingness to renew the insurance cover. The marrieds were 16 times more willing to renew their insurance covers (AOR =15.6, 95%CI 2.3 – 106.4, p=0.005) compared to those singles or separated. Similar findings have been reported in other studies (Bourne & Kerr-Campbell, 2010; Kazungu & Barasa, 2017).

Larger household sizes were more willing to renew their insurance covers compared to the smaller households. Households with 3-5 people were 57 times (AOR = 57.2, 95%CI 4.9-661.0, p=0.001) while those with over six people were 16 times (AOR = 15.8, 95%CI 2.5 – 102.3, p=0.004) more willing to renew their insurance covers compared to households with 1-2 people. This finding is consistent with a study in low- and middle-income countries like Kenya, which revealed that homes with more members had increased likelihood to pay for health insurance (Nosartnejad et al., 2016). This implies that households with big numbers have higher chances of avoiding the catastrophic out of pocket expenditures for health services as the overall benefits masks the families against huge health services costs, a deterrent against access and utilisation of health services in low-resource settings.

Respondents with higher income had less chances of renewing their health cover in comparison to those earning low income of less than Ksh. 5000 per month. A result consistent with another research conducted in Ghana where individuals with relatively high income had low chances to pay for medical cover in contrast to the low-income earners (Kotoh et al., 2018; Kiplagat 2011;). However, our finding differs with studies conducted in Ghana and Kenya respectively that found that richer families had more chances to pay for cover (Aku, et al., 2021; Kazungu & Barasa, 2017; Mukwhana et al., 2015). This may be due to the fact that respondents with higher income may feel more secure and able to

pay out-of-pocket compared to the low-income earners who perceive themselves as more vulnerable. This pattern reflects on the rational choice model's first and second assumption which states that all actions are logical and are built on consideration of costs and rewards. Secondly, that the benefits of an association must outweigh the value for the effort to be completed. In this case, the low-income earners may find the benefits of NHIF cover outweighs the costs. Wealthier individuals are more likely to have alternative private health insurance schemes as opposed to the public statutory NHIF, a feature demonstrated in a study in Kenya by Kiplagat on determinants of health insurance choice (Kiplagat, 2011). This finding demonstrates that inequities persist in health insurance mechanisms. Those from low socio-economic status are willing to voluntarily contribute to their health covers compared to their higher counterparts, who probably feel secure and can afford to pay out-of-pocket health care costs. To achieve a national insurance scheme for all, this means that funding health care through alternative mechanisms preferred by the majority such as tax instead of national health insurance scheme as proposed in a study conducted in Kenya by Chuma and colleagues is a viable mechanism to achieve UHC (Mulupi, et al., 2013).

Awareness of NHIF services was a significant determinant for willingness to renew the insurance cover in the study. A unit increase in awareness of NHIF services led to 13 times increase in odds of willingness to renew of insurance cover (AOR = 13.2, 3.1 – 55.5, $p<0.001$). However, there exists gaps in information on the part of supa cover members as stated by the service providers:

> *Many of them are aware of the NHIF services but again a few are aware of the services they are supposed to be offered.… (Facility in charge, Kajiado)*

> *Yes some are aware but others are not fully aware. This is because a huge percentage of them have been making regular payment and their assumption is that NHIF will cater for everything when they come for treatment. So you find some get frustrated and angry when told they have*

to pay cash because the NHIF will not pay for particular services…. (Clinical officer II. Kajiado).

The awareness in a scale of 1 to 10 I would say I'll give a 4. Most of them think that the NHIF they pay for will cover everything. And most of them will come telling you I have never used my NHIF for probably 2 years so it has a lot of money. So I want this, I want this, I want this, which to the hospital cannot be met. Since in comparison with that the hospital gets and with what the clients have in mind, the client's expectation is so high and when they come they want to be treated in a certain way because they think NHIF basically covers for everything. But you see even in surgeries it doesn't cover everything. You will get a surgery of 200,000 probably NHIF will pay 20,000 so the rest they will have to top up. So the awareness is way below average. … (Clinical officer III, Kajiado)

Evidence from a systematic review conducted in emerged and emerging countries and survey studies in India showed that awareness, knowledge and understanding of insurance especially by the households was associated with enrolment and retention in the insurance scheme (Dror et al., 2016; Savitha, 2017; Thakur, 2016). Our findings are similar to a study in Kenya conducted by Mbau and colleagues which reported that new benefit packages were defiantly disseminated and imbalanced across the layers of populations (Mbau et al., 2020). It is imperative that for UHC targets to be achieved, awareness about the insurance services must be created and healthcare must be accessible, affordable and of high quality to the community with cost not being a hindrance for all.

Consequently, a unit increase in service providers' factors led to a 109 increase in odds of willingness to renew insurance cover (AOR=109.0, 95%CI 14.8-803.8,$p<0.001$).

Services provider factors such as access to accredited NHIF facilities and quality were associated with greater willingness to renew of insurance cover. Service providers on their part agree with this finding but have highlighted issues that influence willingness to renew such as equity, quality; access and NHIF purchase agreements with health facilities that supa a cover member's encounter when accessing care as quoted below.

> *Yes, there is a difference because for civil servants a lot is covered without compromise but some of the services that are supposed to be offered for the ones using the supa cover, they are overwhelming to the hospital part since whatever the supa cover covers is not enough…. (Facility in charge, Kajiado).*
>
> *Okay, some things are beyond us because it's the government that procures what is used in the hospitals and so if the government delays in procuring our patients will not receive all the services they require…. (Facility in charge, Kajiado*)
>
> *Yes, because when patients visit the facility they expect to be treated all kind of diseases and every tests to be done under the cover but when they are told that the cover cannot cover for example some laboratory tests or drugs they get discouraged and they can default paying…. (Hospital administrator I, Kajiado)*

Similar findings have been reported where access to NHIF infrastructure and high quality of services – including availability of medicine and consumable supplies; good healthcare worker frame of mind, and fair lead times offered was significantly related with enrolment and renewal of insurance schemes (Ataguba, 2015; Barasa et al., 2017; Mbau et al; 2020; Ochieng, 2015; Sieverding et al 2018). As shown in Ghana, poor quality care in national health insurance scheme-certified health institutions possibly decreases customers confidence in the scheme and eventually reduces the willingness to renew insurance (Alhassan et al , 2016). This finding clearly indicates that access to and the quality of health services provided by the health facilities in Kajiado County are satisfactory and meet the needs of the residents, a good indicator for the attainment of the universal health coverage (UHC) target as a national priority. Evidence from a systematic review on factors promoting renewal in health insurance in LMICs shows that the insight that healthcare of high calibre and are close to their homes act as elements that increase insurance membership. (Dror et al, 2016). It is imperative that for these UHC targets to be achieved, care must be accessible, affordable and of high quality to the community with cost not being a hindrance for all.

Adverse selection on the other hand had a lower influence on the willingness to renew insurance cover (AOR = 0.043, 95%CI 0.009-0.202, p<0.001). This may be due to the fact that the concept medical insurance such as NHIF cover is still misunderstood by a section of the population in Kajiado County where individuals seek to renew the cover at the point of needing services then drop-off thereafter. This is buttressed by service providers who provided other perspectives on the adverse selection question as stated below:

> *Low willingness to renew is there because of one, the bad economy. Secondly, most people just pay the monthly premium whenever there is need. For `example, pregnant women would pay the monthly premium only when they are pregnant because they know that they will need it when they want to deliver and so after delivering their baby they stop paying. The payment of the monthly premium is done on a need basis…. (Clinician I, Kajiado).*

> *It's because they only need it on a necessity basis in that they pay only when someone is sick and they are very sure that they will need the cover. The harsh economic times has also contributed to the default payment of the premium because basic needs such as food are considered first before NHIF payment which they feel is not a priority. Prolonged payment is also the reason for default payment in such a way that when one has been well for like two years without falling sick it beats no logic to pay for what you are not going to use…. (Clinician I, Kajiado)*

> *People default because of lack of money. Nowadays it is tough and people pay according to need. If they are sick that is when they pay because why should I pay when am not sick. I can go a whole year without being sick and so I see no need to pay for it if I'm not using. Other people lose their jobs and the payments stop. Some people have gone out of the country and still others have passed on…. (Clinical officer II, Kajiado)*

This finding is consistent with studies conducted in both Kenya and Ghana (Duku et al, 2016; Kazungu & Barasa, 2017). Evidence suggests that if individuals are knowledgeable of the mechanisms on how their insurance worsk, they are at an increase state to regsiter in insurance and especailly when claims are honoured they are most likely to pay their monhtly premiums (Dror et al, 2016). This clearly demonstrates that more efforts are needed to create awareness on the risk benefit analysis of healthcare and the social protection provided for by the voluntary insurance covers against catastrophic out-of-pocket expenditures on healthcare especially for chronic illnesses.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents a summary of the study, conclusions, recommendations as well as suggestion for further research on the determinants of willingness to renew in national hospital insurance fund among national scheme members in Kajiado County.

5.2 Summary

The purpose of this study was to develop a better understanding of the factors that determine willingness to renew in the NHIF's National scheme (supa cover) members in Kajiado County. 394 NHIF supa cover members were sampled and selected for the study and a cross sectional survey was conducted 12 Key informant interviews were conducted. The main instrument for data collection was a questionnaire targeting NHIF super cover members and KII targeting managers and in-charges for NHIF accredited facilities. The data was analysed to find out the influence of NHIF premium level, influence of awareness of NHIF fund services, influence of service providers and also establish the influence of adverse selection on NHIF supa cover willingness to renew as determinants of low and high willingness to renew. Descriptive statistics were reported using median and interquartile ranges. Binary logistic regression analysis at bivariate and multivariate levels was conducted to show significant determinants associated with the willingness to renew insurance covers. Strength of the relationships linking the independent variables (determinants) and the dependent variable (willingness to renew NHIF) were reported using odds ratios at 95% confidence intervals and p-values.

5.3 Conclusion

The findings of this research has yielded greater insights of the factors that determine willingness to renew in the NHIF's National scheme (supa cover) members in Kajiado given the importance of social insurance cover in ensuring equitable access to quality health care.

5.3.1 Influence of Premium Level on Willingness to Renew

The study found that, the respondent's perceived that the current NHIF premiums were affordable, modes of payment were easy, premium payment were flexible monthly frequency of payment appropriate and were comfortable with the penalties on default.

5.3.2 Influence of Awareness of NHIF fund Services

The study found that participants understood the willingness to renew procedure of membership when it expires and were always aware that the insurance will pay their visits at the health facility. Similarly, participants were aware of the accredited health facilities to seek care from in country) and also were aware that they could get treatment overseas with the supa cover package. However, respondents disagreed on whether they receive communication from NHIF about super cover benefits or have been educated on NHIF supa cover benefits.

5.3.3 Influence of Service Providers

The study established that respondents believed service provider factors played a major role in influencing their willingness to renew the insurance covers. Respondents were satisfied that their cards were accepted as modes of payment received most of the services in the accredited health facilities, and were comfortable with the waiting time However, Respondents were not satisfied as services in the NHIF guidelines did not match what they

receive in the facilities. On average, there was good satisfaction that respondents were treated with courtesy received satisfactory services in accredited health facilities, and often received drugs prescribed in the accredited health facilities.

5.3.4 Influence of Adverse Selection on NHIF

This study has established that adverse selection had an influence on willingness to renew. Respondents believed they needed a health service immediately would stop NHIF once they get the health services had individuals who need urgent health services and they considered themselves as healthy Respondents report an increased likelihood of willingness to renew of insurance cover because they need health services and/or have an individual who need the health services.

5.3.5 Willingness to Renew Insurance Cover Determinants

The study found that, respondents showed high willingness to continue paying the insurance premiums and renew their insurance covers for health services. Respondents were willing to renew their covers with NHIF if they knew the cover benefits, continue with payments largely if the costs of inpatient services are covered, if they would receive quality health services and also continue with NHIF payments due to the benefits.

At Inferential statistics on all the social demographic and the four factors (premium level, Awareness of NHIF services and adverse selection) studied found that; marital status, household size, household income per month, awareness of NHIF fund services, service providers and adverse selection on willingness to renew were significant determinants of willingness to renew the insurance cover.

Finally, the study found that three variables as the most significant determinants of willingness to renew- awareness of NHIF, services service providers and adverse selection all with P value of ($p<0.0001$) respectively, with a 95% confidence level. Service provider factors had the greatest effect on willingness to renew (AOR=109.0, 95%CI 14.8-803.8, $p<0.001$), followed by awareness (AOR = 13.2, 3.1 – 55.5, $p<0.001$) and adverse selection with lowest influence (AOR = 0.043, 95%CI 0.009-0.202, $p<0.001$).

5.4 Recommendations

This paper recommends that, for awareness on benefits entitlement creation, NHIF should improve on communication strategy to include information on the benefits accruing from registering and retaining the insurance cover to the residents. Specific focus on benefits entitlement and member education on the supa cover package is critical. The information should be easily accessible, consistent across all the social structures in this community. Increase in awareness of benefits entitlement will promote ownership, motivate members and encourage members to hold service providers accountable. This is imperative for UHC targets to be achieved.

Additionally, and to ensure that there is increased entry to health services, the study recommends that NHIF reviews the rebates paid to health care facilities to ensure there is adequate cost recovery for the benefit of the members .

The study recommends that more awareness is required to sensitize the community on the risk-benefits associated with the adverse selection as a determinant for willingness to renew in health insurance for social protection. NHIF should also introduce incentives for Supa-cover members who pay on time such could include discounts on premiums to motivate members who remain up-to date premiums but do not utilize their cover.

More awareness is required to sensitize the community on the risk-benefits analysis associated with the adverse selection as a determinant for willingness to renew in health insurance for social protection.

5.5 Recommendations for Further Studies

In addition to replicating the study, future research should examine survival analysis of NHIF supa-cover members through a longitudinal study. Secondly, NHIF purchase agreements and accountability on the supa-cover is an area that needs further research.

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APPENDICES

Appendix I: Consent Form

Kenneth Sisimwo
P.O. BOX 4043-30200
KITALE
Kenya Methodist University
P. O. Box 267-60200
MERU, Kenya

SUBJECT: INFORMED CONSENT

Dear Respondent,

My name is Kenneth Sisimwo; I am an MSc student from Kenya Methodist University. I am conducting a study titled: "**Determinants of Willingness to renew in National Hospital Insurance Fund among NHIF National Scheme Members in Kajiado County''** This research proposal is critical to strengthening health systems as it will generate new knowledge in this area that will inform decision makers to make decisions that are evidence based.

Procedure to be followed:

Participation in this study will require that I ask you some questions and access all the hospital's departments. Participation in this study will require that I ask you some questions and I will record the information in a questionnaire checklist.

You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you at your place of employment.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Discomforts and risks

Some of the questions you will be asked are on an intimate subject and may be embarrassing or make you uncomfortable. If this happens, you may refuse to answer if you choose. You may also stop the interview at any time. The interview may take about 40 minutes to complete.

Benefits

If you participate in this study, you will help us to strengthen the health systems in Kajiado County, Kenya as a country and other low-in- come countries in Africa. As a result, countries, communities and individuals will benefit from improved quality of healthcare services. This study is critical to strengthening the health systems, as it will generate new knowledge in this area that will inform decision makers to make decisions that are evidence based.

Rewards

There is no reward for anyone choosing to participate in the study.

Confidentiality

The interview will be conducted in a private setting. Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safe place at the University.

Contact Information

If you have any questions, you may contact my supervisors whose names and contacts are as follows:

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1. Mr. Musa Oluoch

Department of Health Systems Management

Kenya Methodist University

Dr Keziah Njoroge

Department of Health Systems Management

Kenya Methodist University

Participant's Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is voluntary. I understand that my records will be kept private and that I can leave the study at any time.

I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my work place.

Date: ……. **Signature:** ……

Investigator's Statement

I, the undersigned, have explained to the volunteer in a language s/he understands on the procedures to be followed in the study and the risks and the benefits involved.

Name of Interviewer: …… **Date**: …….

Appendix II: List of NHIF Accredited Facilities in Kajiado County

Hospital	NHIF Branch	Cover
A.I.C KAJIADO DISPENSARY	KAJIADO	Inpatient & Outpatient
ASSISI NURSING HOME	KITENGELA	Inpatient & Outpatient
ATHI COMPLEX & COMMUNITY HEALTH CENTRE	KITENGELA	Inpatient & Outpatient
ATHI COMPLEX GALAXY HOSPITAL	KITENGELA	Inpatient & Outpatient
ATHI RIVER MEDICAL SERVICES	KITENGELA	Inpatient & Outpatient
ATHI-RIVER SHALOM COMMUNITY HOSPITAL	KITENGELA	Inpatient & Outpatient
DENTMIND DENTAL CENTRE	KITENGELA	Inpatient & Outpatient
ENKITOK JOY NURSING HOME	ONGATA RONGAI	Inpatient & Outpatient
ENTASOPIA HEALTH CENTRE	ONGATA RONGAI	Inpatient & Outpatient
FATIMA HEALTH CENTRE	KAJIADO	Inpatient & Outpatient
FAVOUR MEDICAL SERVICES	KAJIADO	Inpatient & Outpatient
GALAXY MEDICAL CENTRE	KAJIADO	Inpatient & Outpatient
GK PRISON DISPENSARY (ATHI RIVER)	KITENGELA	Inpatient & Outpatient
ILKILORIT DISPEENSARY	ONGATA RONGAI	Inpatient & Outpatient
ILPARAKUO DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
IMURTOT HEALTH CENTRE	LOITOKTOK	Inpatient & Outpatient
KAJIADO DISTRICT HOSPITAL	KAJIADO	Inpatient & Outpatient
KAREN HOSPITAL LTD	ONGATA RONGAI	Inpatient
KIBERA SOUTH HEALTH CENTRE	ONGATA RONGAI	Inpatient & Outpatient
KILINITO DISPENSARY (CDF)	ONGATA RONGAI	Inpatient & Outpatient
KING DAVIDS HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
KIPETO DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
KITENGELA MEDICAL CENTRE	KITENGELA	Inpatient & Outpatient
KITENGELA MEDICAL SERVICES-KAJIADO	KAJIADO	Inpatient & Outpatient
KITENGELA PONA SERVICES	KITENGELA	Inpatient & Outpatient
KITENGELA SUB-DISTRICT HOSPITAL	KITENGELA	Inpatient & Outpatient
LANGATA HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
LEXA MEDICAL CENTRE	KAJIADO	Inpatient & Outpatient
LOITOKTOK DISTRICT HOSPITAL	KAJIADO	Inpatient & Outpatient
MAGADI SODA COMPANY HOSPITAL MAGADI	ONGATA RONGAI	Inpatient & Outpatient
MAKADARA HEALTH CARE AND MATERNITY HOME	KITENGELA	Inpatient & Outpatient
MARIAKANI COTTAGE HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
MARIAKANI COTTAGE HOSPITAL MLOLONGO	KITENGELA	Inpatient & Outpatient
MATASIA NURSING HOME	ONGATA RONGAI	Inpatient & Outpatient
MAWEPI MATERNITY AND HEALTH SERVICES	KITENGELA	Inpatient & Outpatient
MERIDIAN HOSPITAL KISERIAN	ONGATA RONGAI	Inpatient & Outpatient
MERRUESHI VILLAGE HEALTH CENTRE	KAJIADO	Inpatient & Outpatient
MILE 46 HEALTH CENTRE	KAJIADO	Inpatient & Outpatient
MOSIRO DISPENSARY (KAJIADO NORTH)	ONGATA RONGAI	Inpatient & Outpatient
MOUNT OLIVE SINAI HOSPITAL LIMITED	ONGATA RONGAI	Inpatient & Outpatient

MURANTAWA DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
NAIROBI PLACE ADDICTION TREATMENT CENTRE LTD	ONGATA RONGAI	Inpatient & Outpatient
NAIROBI WOMENS HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
NAIROBI WOMENS HOSPITAL KITENGELA MEDICAL CLINIC	KITENGELA	Inpatient & Outpatient
NAJILE DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
NAMUNYAK MEDICAL CENTRE	KAJIADO	Inpatient & Outpatient
NGONG RAPHA HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
NGONG SUB-COUNTY HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
OLDONYO NYOKIE DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLDORKO DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLGUMI DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLKIRAMATIAN DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLOIKA DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLOOLTEPES DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLOOLUA DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLOSHO-OIBOR DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
OLTEPESI DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
PAKASE DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
RESTORE HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
ROMBO MISSION HOSPITAL	KAJIADO	Inpatient & Outpatient
S.U.C.O.S HOSPITAL	KITENGELA	Inpatient & Outpatient
SAIKERI DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
SHOMPOLE DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
SIANA COMMUNITY HOSPITAL	KAJIADO	Inpatient & Outpatient
SINAI HOSPITAL RONGAI	ONGATA RONGAI	Inpatient & Outpatient
ST PAUL COMMUNITY MEDICAL CENTRE	KITENGELA	Inpatient & Outpatient
ST. PAULS HEALTH SERVICES LIMITED	KITENGELA	Inpatient & Outpatient
ST.MARYS MISSION HOSPITAL	ONGATA RONGAI	Inpatient & Outpatient
ST.PETER CLAVER RC DISPENSARY	ONGATA RONGAI	Inpatient & Outpatient
SYOKIMAU HEALTH CENTRE	KITENGELA	Inpatient & Outpatient
THE FORK HOSPITAL KENYA	KITENGELA	Inpatient & Outpatient
TOPCARE NURSING HOME	KITENGELA	Inpatient & Outpatient
TRINITY CARE CENTRE LIMITED	ONGATA RONGAI	Inpatient & Outpatient
TULAH MEDICAL SERVICES	LOITOKTOK	Inpatient & Outpatient
WANANCHI JAMII MATERNITY & NURSING	ONGATA RONGAI	Inpatient & Outpatient
ZAMZAM MEDICAL SERVICES	ONGATA RONGAI	Inpatient & Outpatient

Appendix III: Questionnaire (English)

The purpose of the study is to assess the determinants that influence willingness to renew of National Health Insurance national scheme members in Kajiado County, Kenya. Kindly fill the response as honestly as possible. The information you provide will be used purely for academic purposes and the recommendations made will be of great importance to our country. The information you provide will be treated with utmost confidentiality.

Section A: Demographic data

Instructions: TICK (√) appropriately.

1. Gender. Male [ ] Female [ ]

2. What is your age?

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

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

3. What is your marital status?

Married [ ] Separated [ ] Single [ ] Divorced [ ]

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

1-2 [ ] 6-8 [ ] 3-5 [ ] 9 and above [ ]

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

1-3 [ ] 4-6[ ] 7 and above [ ]

5. When did you first register as an NHIF supa cover member?

6. Do you have any other insurance cover other NHIF?

[] No [] yes

If yes explain……

Section B: Level of income

1. What is your main source of income

   Salaried employment [ ] entrepreneur [ ] Casual worker [ ]

   others (please specify)...

2. How frequently do you receive your income?

   Daily [ ] Weekly [ ] monthly [ ]

   others (please specify……..

3. Approximately how much is the total household income per Month?

   Below shillings 5000 [ ] Ksh 5001 -15000 [ ]

   Ksh 15001-30000 [ ] Ksh above 30,001 [ ]

Section C: NHIF Premium

	Agree	Strongly agree	Uncertain	Disagree	Strongly Disagree
i.The current NHIF premiums is affordable to me					
i.The current modes of paying premiums is easy					
i.I find premium payment to be flexible					
v.The monthly frequency of premium payment is appropriate					
v.Penalties on default is comfortable for me					

Section D: Awareness NHIF fund services

	Agree	Strongly agree	Uncertain	Disagree	Strongly Disagree
i.I am understand the renewal procedure of membership of NHIF when it expires					
i.I often receive communication from NHIF about super cover benefits					
i.I am know the NHIF accredited health facilities to go to when I need service.					
v.I have been educated on NHIF supa cover benefits					
v.I am often know what NHIF will pay for my visits to a health facility.					
i.I know I can get treatment overseas with the supa cover package					

Section E: Service provider factors

		Agree	Strongly agree	Uncertain	Disagree	Strongly Disagree
i).	I am confident that my card will be accepted as a mode of payment in an accredited health facility					
ii).	NHIF accredited health facilities are available within 10 Kms of my residence					
iii).	I receive most of the health services under the super-cover in the accredited health facilities					
iv).	NHIF card holders are treated with courtesy					
v).	I would like to enrol for the other NHIF covers but I am not allowed to					
vi).	The services in the NHIF guidelines match what I receive in the facilities.					
vii).	The waiting time is comfortable for me in the accredited health facilities					
viii).	I am confident of receiving satisfactory services in accredited health facilities					
ix).	I often receive all drugs prescribed in the accredited health facilities					

Section F: Adverse selection factors

	Agree	Strongly agree	Uncertain	Disagree	Strongly Disagree
i). I currently need a health service immediately					
ii). I am likely to stop NHIF after I get the health services that I need now					
iii). I consider myself a healthy individual					

Section G: Willingness to renew factors

	Agree	Strongly agree	Uncertain	Disagree	Strongly Disagree
i). I am willing to continue with NHIF payments due to its benefits					
ii). I would reconsider enrolling with the NHIF if I knew all the NHIF cover benefits					
iii). I would enrol for the NHIF cover if my dependents were all covered					
iv). If the NHIF accredited providers would provide quality services I would enrol for it					
v). I would renew the NHIF cover if there more NHIF accredited facilities near me					
vi). I would renew the membership if NHIF was offering services for chronic diseases					
vii). I would renew my membership if NHIF membership covered Inpatient services					

Appendix Iv: Binary Logistic Analysis of Relationships Between Independent and Dependent Variable

Independent variable	Hosmer & Lemeshow test significance	Categories	Odds Ratio	P-value
Gender	.	male	3.8	<0.001
		female	1	
Age	1	18-25	1	
		26-35	287207022.91	0.9999
		36-45	2182395470.15	0.9999
		46+	1942277830.50	0.9999
Marital status	1	Separated	1.000	
		Married	0.883	0.614
		Single	0.381	0.003
		Divorced	0.652	0.328
Household size	1	1-2 people	1.000	
		3-5 people	0.147	<0.001
		6+ people	0.207	0.001
Children below 18yrs in HH	1	1-3 children	1	
		4-6 children	1048846945.93	0.997
		7 and above	6784954726.10	0.997
Household income per month (KSh)	1	<5000		
		5001 - 15000	0.109	0.604
		15001 - 30000	0.035	0.504
Premium level	<0.001		2.278	<0.001
Awareness of NHIF fund services	<0.001		3.885	<0.001
Service Providers on willingness to renew	<0.001		6.064	<0.001
Adverse selection on willingness to renew	<0.001		2.180	<0.001

Appendix V: Questionnaire (Kiswahili)

Madhumuni ya utafiti huo ni kutathmini vigezo vinavyoathiri utayari wa kuhuisha wanachama wa mpango wa kitaifa wa Bima ya Afya katika Kaunti ya Kajiado, Kenya. Jaza majibu kwa uaminifu iwezekanavyo. Taarifa unazotoa zitatumika tu kwa madhumuni ya kitaaluma na mapendekezo yaliyotolewa yatakuwa na umuhimu mkubwa kwa nchi yetu. Taarifa unazotoa zitatunzwa kwa usiri mkubwa.

Sehemu A: Data ya idadi ya watu

Maelekezo: TICK (√) ipasavyo

1. Jinsia. Mwanaume [ ] Mwanamke [ ]

2. Umri?

Miaka 18-25 [ ] Miaka 26-35 [ ]

Miaka 36-45 [ ] Miaka 46 years Na zaidi [ ]

3. Hali ya Ndoa ni ipi?

Nimeolewa [ ] Nimetengwa [ ] Sijaolewa [ ] Nimepewa Talaka [ ]

4. (a) Ukubwa wa kaya yako ni upi?

1-2 [ ] 6-8 [ ] 3-5 [ ] 9 na Zaidi [ ]

(b) Ni watoto wangapi (chini ya miaka 18) wanaoishi katika kaya yako?

1-3 [ ] 4-6[ ] 7 na Zaidi [ ]

5. Ulijiandikisha lini kwanza kama mwanachama wa bima ya supa ya NHIF?

6. Je, una bima nyingine yoyote inayofunika NHIF nyingine?

[] La [] Ndio

Kama ndio fafanua……

Sehemu B: Kiwango cha mapato

4. Nini chanzo chako kikuu cha mapato

Ajira ya mishahara [ ] Mjasiriamali [ ] Mfanyakazi wa kawaida [ ]

Wengine (Tafadhali fafanua)...

5. Unapokea mapato yako mara ngapi?

Kila siku [ ] Kila Wiki [ ] Kila mwezi [ ]

Zingine (tafadhali fafanua…..

6. Takriban jumla ya mapato ya kaya kwa mwezi ni kiasi gani?

Chini ya Shilingi 5000 [ ] Shilingi 5001 -15000[ ]

Shilingi 15001-30000 [ ] Shilingi 30,001 Na Zaidi [ ]

Sehemu ya C: Malipo ya NHIF

	Nakubaliana kabisa	Nakubaliana	Sina uhakika	Sikubaliani	Sikubaliani kabisa
i). Malipo ya sasa ya NHIF ni nafuu kwangu					
ii). Njia za sasa za kulipa malipo ni rahisi					
iii). Naona Malipo ya NHIF ni legevu kwangu					
iv). Mzunguko wa kila mwezi wa malipo ya premium ni sahihi					
v). Adhabu kwa chaguo-msingi ni vizuri kwangu					

Sehemu D: Uhamasishaji huduma za mfuko wa NHIF

	Nakubaliana kabisa	Nakubaliana	Sina uhakika	Sikubaliani	Sikubaliani kabisa
i). Naelewa utaratibu wa upya wa uanachama wa NHIF unapoisha muda wake					
ii). Mara nyingi huwa napokea mawasiliano kutoka NHIF kuhusu faida kubwa za bima					
iii). Najua vituo vya afya vilivyoidhinisha na huenda pale ninapohitaji huduma.					
iv). Nimeelimishwa juu ya faida za bima ya supa cover ya NHIF					
v). Mara nyingi najua NHIF itagharamia nini kwa ziara zangu katika kituo cha afya.					
vi). Najua naweza kupata matibabu nje ya nchi na kifurushi cha supa cover					

Sehemu E: Sababu za watoa huduma

	Nakubaliana kabisa	Nakubaliana	Sina uhakika	Sikubaliani	Sikubaliani kabisa
i). Nina imani kuwa kadi yangu itakubaliwa kama njia ya malipo katika kituo cha afya kilichoidhinishwa					
ii). Vituo vya afya vilivyoidhinishwa na NHIF vinapatikana ndani ya Km 10 kutoka makazi yangu					
iii). Napata huduma nyingi za afya chini ya super-cover katika vituo vya afya vilivyoidhinishwa					
iv). Wamiliki wa kadi za NHIF wanatibiwa kwa hisani					
v). Ningependa kujiandikisha kwa vifuniko vingine vya NHIF lakini siruhusiwi					
vi). Huduma katika miongozo ya NHIF zinalingana na kile ninachopokea katika vituo.					

vii). Muda wa kusubiri ni vizuri kwangu katika vituo vya afya vilivyoidhinishwa					
viii). Nina uhakika wa kupata huduma za kuridhisha katika vituo vya afya vilivyoidhinishwa					
ix). Mara nyingi napokea dawa zote zilizoagizwa katika vituo vya afya vilivyoidhinishwa					

Sehemu F: Sababu mbaya za uteuzi

	Nakubaliana kabisa	Nakubaliana	Sina uhakika	Sikubaliani	Sikubaliani kabisa
i). Kwa sasa nahitaji huduma ya afya mara moja					
ii). Kuna uwezekano wa kusimamisha NHIF baada ya kupata huduma za afya ninazozihitaji sasa					
iii). Najiona ni mtu mwenye afya njema					

Sehemu G: Utayari wa kujisajili upya

	Nakubaliana kabisa	Nakubaliana	Sina uhakika	Sikubaliani	Sikubaliani kabisa
i. Niko tayari kuendelea na malipo ya NHIF kutokana na faida zake					
ii. Ningefikiria upya kujiandikisha na NHIF ikiwa ningejua faida zote za bima ya NHIF					
iii. Ningejiandikisha kwa bima ya NHIF ikiwa wategemezi wangu wote wangefunikwa					
iv. Kama watoa huduma walioidhinishwa na NHIF wangetoa huduma bora ningejiandikisha kwa ajili yake					
v. Ningefanya upya bima ya NHIF ikiwa kuna vituo zaidi vilivyoidhinishwa na NHIF karibu nami					
vi. Ningehuisha uanachama kama NHIF ingekuwa inatoa huduma kwa magonjwa sugu					
vii. Ningehuisha uanachama wangu ikiwa uanachama wa NHIF utashughulikia huduma za wagonjwa wa nje					

Appendix VI: Key Informant Interview Guide: Service providers Health Facility Administrators/Managers

TITLE: DETERMINANTS OF WILLINGNESS TO RENEW IN NATIONAL HOSPITAL INSURANCE FUND AMONG NHIF NATIONALSCHEME MEMBERS IN KAJIADO COUNTY, KENYA

Thank you for agreeing to do this interview. My name is Kenneth Sisimwo, a student from Kenya Methodist University currently pursuing a Master's Degree in Health systems Management. I am doing a study on the determinants of NHIF Nation scheme willingness to renew among NHIF National scheme members in Kajiado county of Kenya. The purpose of this interview today is to learn more about how your experience in providing services NHIF Nation scheme members in the health insurance scheme.

The interview will last about 30 minutes.

Everything you share with us will be confidential. To protect your privacy, we will not connect your name with anything that you say.

Recruitment Criteria: *Refer to Sampling Plan. Participants will come* from one of the following sample groups:

- Facility in Charge/hospital administrators/CEO

Section 1: Introduction (3 Mins)

1. Please begin by describing your role in the institution/Health facility.

Section 2: Premium level (20 minutes)

Question 1: What do you think of the monthly premium level of 500 Ksh (16 Ksh per day) for the National scheme members (supa cover)? There is low willingness to renew, why do you think there is the low willingness to renew?

Section 2: Awareness of NHIF fund services

Question 2: How would you describe the awareness level of National scheme members to the services you provide at the facility?

Section 3: Equity

Question 3: What are your thoughts on the different schemes offered by NHIF (civil servants and supa cover? Probe on the challenges the facility faces when providing services for the supa cover patients.

Section 4: Willingness to renew factors

Question 4. Many National scheme members (supa cover) default on premiums after enrolment. Why do you think so? Probe: Does the service providers play a role on defaultment of premium payment?

Concluding interview

We have come to the end of our interview, but before we finish do you have any additional comments for us?

THANK YOU FOR YOUR PARTICIPATION

Appendix VII: NACOSTI License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **896589**

Date of Issue: **14/February/2022**

RESEARCH LICENSE

This is to Certify that Mr.. kenneth Saikwo Sisimwo of Kenya Methodist University, has been licensed to conduct research in Kajiado, Narok on the topic: DETERMINANTS OF RETENTION IN NATIONAL HOSPITAL INSURANCE FUND AMONG NATIONAL SCHEME MEMBERS IN KAJIADO COUNTY-KENYA for the period ending : 14/February/2023.

License No: **NACOSTI/P/22/15653**

896589

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NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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Appendix VIII: Ethical Approval

KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA FAX: 254-64-30162
TEL: 254-064-30301/31229/30367/31171 EMAIL: serc@kemu.ac.ke

January 24, 2022 KeMU/SERC/HSM/2/2022

Sisimwo Kenneth Saikwo
Kenya Methodist University

Dear Kenneth,

SUBJECT: DETERMINANTS OF RETENTION IN NATIONAL HOSPITAL INSURANCE FUND AMONG NATIONAL SCHEME MEMBERS IN KAJIADO COUNTY, KENYA

This is to inform you that Kenya Methodist University Scientific Ethics and Review Committee has reviewed and approved your above research proposal. Your application approval number is KeMU/SERC/HSM/2/2022. The approval period is 24th January 2022 – 24th January 2023

This approval is subject to compliance with the following requirements

I. Only approved documents including (informed consents, study instruments, MTA) will be used.

II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Scientific Ethics and Review committee.

III. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KeMU SERC within 72 hours of notification.