DETERMINANTS OF THE UPTAKE OF NATIONAL HEALTH INSURANCE FUND AMONG PATIENTS IN MERU TEACHING AND REFERRAL HOSPITAL, KENYA

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DECLARATION

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

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ABSTRACT

High out of pocket expenditure is a big challenge to accessing healthcare in Kenya. The low uptake of National Health Insurance Fund cover manifests, in many low income and vulnerable households, as risky behaviours such as self-medication, irrational use of over-the-counter antibiotics, use of unqualified medical practitioners as well as fundraisers and sale of family property when unforeseen ill health strikes. This study explored the determinants of the uptake of National Health Insurance Fund among patients seeking health services in Meru Teaching and Referral Hospital and specifically looked at whether accessibility, awareness, organization capacity, and availability of finances influence the uptake of National Health Insurance Fund. The study adopted a descriptive cross-sectional survey design utilizing quantitative data obtained through the administration of closed-ended questionnaires with approval by the Strathmore University Institutional Scientific and Ethical Review Committee. Three hundred and seventy-six (376) patients at the Meru Teaching and Referral Hospital were issued with questionnaires out of which two hundred and seventy-nine (279) responded. Quantitative data analysis techniques using Statistical Package for Social Sciences version 27.0 were applied involving descriptive statistics (frequencies, percentages, mean and standard deviation), regression and reliability analyses using Cronbach's alpha coefficients to measure internal consistency of underlying study constructs. Results were presented using tables. The study concluded that the four independent study variables all influenced the uptake of National Health Insurance Fund cover with availability of finances emerging as the most significant influence on National Health Insurance Fund uptake followed by accessibility to National Health Insurance Fund services including ease of enlisting and making premium payments, then awareness of National Health Insurance Fund services and benefits and lastly organization capacity which entailed patients' perception of the ability of the hospital to offer quality health services. All the variables were found to be significant with p-values less than 0.05. The findings of this study provide useful insights to policymakers in Kenya including those in the Ministry of Health, the National Treasury and county governments on consumer (patient) perspectives and needs regarding uptake of health cover. Kenya can make enhanced progress towards universal health coverage if initiatives to improve household finances, ease of access to health insurance administration, awareness on benefits of health cover and perceptions on health facility ability to provide quality care are undertaken even as the government transforms the National Health Insurance Fund to the Social Health Authority.

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LIST OF ABBREVIATIONS

CBHI	Community Based Health Insurance
COTU	Central Organization of Trade Unions
KHSSP	Kenya Health Sector Strategic and Investment Plan
KNUT	Kenya National Union of Teachers
MeTRH	Meru Teaching and Referral Hospital
NCDs	Non-Communicable Diseases
NHIF	National Health Insurance Fund
NHIS	National Health Insurance Scheme
PHC	Primary Health Care
SACCOs	Savings and Credit Cooperative Societies
SDGs	Sustainable Development Goals
UHC	Universal Health Care
UK	United Kingdom

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter lays the foundation for a comprehensive exploration of the uptake of health insurance among patients. It discusses the varied health financing mechanisms adopted worldwide, emphasizing the critical role of health insurance in advancing UHC. In Kenya, despite constitutional provisions and the establishment of the National Health Insurance Fund (NHIF), significant gaps persist in achieving comprehensive coverage, particularly among low-income households. The chapter articulates the research problem, which draws attention to persistent barriers such as economic constraints, lack of awareness, and systemic inefficiencies plaguing the healthcare financing landscape. Furthermore, the chapter discussed research objectives, research questions, justification, scope, and significance of the study.

1.1 Background of the Study

The attainment of universal health care (UHC), a widely endorsed social goal, will depend to a large extent on wide access to health care services and low financial hurdles to their utilization, with the expectation being to improve the general health standing of the populace (WHO, 2018). Health insurance is a form of social protection against the risk of incurring medical expenditure among individuals. It is a critical pillar of health care financing and the main driver in achieving universal health coverage in most nations. It is also useful in shielding homes from calamitous medical costs and the resultant impoverishment that comes with ill health (Fiestas Navarrete, Ghislandi, Stuckler & Tediosi, 2019).

Countries across the globe have adopted different health financing mechanisms, including social health insurance, to ensure universal access to quality and basic health care for their populace (Hsieh et al., 2019). Developed countries such as Australia, Canada, Japan and Germany have made good progress towards adequately financing the health needs of their populace through a combination of public and private health insurance systems. Health care accessibility through health insurance in developing countries however remains limited due to low organization capacity (Onwujekwe et al., 2019).

In many LMICs, achieving universal health coverage (UHC) is a critical goal, as endorsed by global health organizations like the World Health Organization (WHO). For instance, in Bangladesh, achieving universal health coverage (UHC) remains a significant challenge despite efforts by the government and various stakeholders (Joarder, Chaudhury & Mannan, 2019). The country faces a high burden of disease, limited healthcare infrastructure, and financial barriers to accessing essential services. Bangladesh has implemented health financing mechanisms, including health insurance, to improve access to healthcare and reduce financial burdens on individuals and families. However, challenges such as low awareness, limited coverage, and inadequate funding constrain the effectiveness of these schemes. The government of Bangladesh has introduced several health insurance programs targeting different population segments, including the informal sector and vulnerable groups. For example, the government's Health Protection Scheme aims to provide financial risk protection to poor households by covering essential health services and catastrophic health expenditures (Sarker et al., 2022). Despite these initiatives, the uptake of health insurance remains low in Bangladesh, particularly among rural and marginalized populations. Factors such as affordability, trust in the healthcare system, and the quality of services influence individuals' decisions to enroll in health insurance schemes. Furthermore, the fragmented nature of the healthcare system in Bangladesh, with a mix of public, private, and informal providers, complicates efforts to achieve UHC. Coordination among stakeholders, regulatory frameworks, and investments in healthcare infrastructure are essential to strengthen the health system and expand access to quality services.

Dang, Dang and Vallish (2021) observed that a widespread lack of insurance compounds the healthcare challenges that India faces. Although some form of health protection is provided by government and major private employers, the health insurance schemes available to the Indian public are generally basic and inaccessible to most people. India's first medical insurance scheme for the poor, especially vulnerable rural households was launched in the 1996/1997 Fiscal Budget. The Janarogya Yojana Scheme is marketed by the four subsidiaries of General Insurance Company and covered people between the ages of five and seventy for pre-and post-hospitalization expenses for up to 30 and 60 days respectively. The insurance coverage costs around $122 per year (RamPrakash & Lingam, 2021).

Sisko et al. (2019) reported that the Nigerian Government established the National Health Insurance Scheme (NHIS) under the Act 35 of 1999 and aimed at providing easy access to health care for all Nigerians at an affordable cost through various prepayment systems. NHIS is a social security that guarantees the provision of required health services to persons on the payment of token contributions at regular intervals. The beneficiaries are civil servants in Federal employment, 300,000 pregnant women and children under the maternal and child health project (Wang & Zhou, 2020). In Rwanda, a mutual health insurance was established in 1999 across the country to ensure that the population of Rwanda particularly those in rural communities and the informal sector had equitable access to quality health services. Mutual health insurance is intended to complement the existing social and private health system (Tonkei, 2022).

The Constitution of Kenya has entrenched the right to health (G.O.K, 2010). However, an enjoyment of this right by the poor remains a pipe dream because they cannot afford to pay for all their health services needs with approximately 83% of the population of Kenya having unstable financial protection from health care expenses and about 1.5 million being pushed into poverty annually due to catastrophic health expenditure. About 16% of ill persons do not get medical attention because of financial limitations and 38% are forced to either borrow or sell their belongings to meet their health needs (Ministry of Health, 2017). The National Health Insurance Fund (NHIF) is the primary provider of health insurance with a sole mandate of increasing access to health services. Over the years, NHIF has continued to grow and has expanded its scope to position itself towards the attainment of Universal Health Coverage as detailed in the Kenya Health Sector Strategic and Investment Plan (Mwaura et al., 2021). NHIF has contractual agreements covering both inpatient and outpatient services with a defined scope of benefits.

There are many determinants of health and health care seeking. Although the determinants are similar across populations, their interaction and influence on people's actions are unique to a population based on the environment they live in (Otieno, 2020). Utilization of health care refers to use of health services by the people. Physical accessibility to a facility, its ability to provide required health services and patient's ability to pay are all essential determinants of utilization of health care services in case of occurrence of disease. The main challenge of healthcare access in Kenya lies primarily in the acute scarcity of resources, and inadequate resource allocation (Otieno et al., 2020).

Over the past few decades, out of-pocket (OOP) health expenditure has been increasing since the introduction of user fees in the health sector. To curtail the rise in publicly financed health expenditures, OOP expenditures have been implemented across the country consequently leading to unequal burden among people in various social strata. This goes against the objectives of UHC which aims at ensuring that all Kenyans access and receive essential quality health services without suffering financial hardship. These services include promotive, preventive, curative, rehabilitative and palliative health services (Owino, Wangong'u, Were & Maleche, 2020).

Since independence the government has worked towards improvement of the health of its people with the number of health facilities increasing rapidly to serve the health needs of the escalating population (Ministry of Health, 2014). Since 1994, the Kenyan health sector has been guided by the Kenya Health Policy Frameworks (KHPF) that provide direction to promote improvement of health status in line with constitutional requirements, the Vision 2030 development agenda, and global commitments. The current policy, KHPF 2014-2030, focuses on promoting equity, multi-sectoral approach, people centeredness, participation, efficiency, and social accountability in provision of healthcare services to improve access to, quality of, and demand for healthcare (Kisali, 2021).

The Constitution of Kenya, 2010 delegates the governance and management role of healthcare to the designated 47 county governments in a system called devolution (Hope, 2014). The county governments are responsible for promotion of democracy and accountability in healthcare delivery, fostering a flawless service delivery and improving participation of citizens in decision making on issues related to their health. Despite health being one of the functions that has been devolved, the impact of devolution on patterns of utilization of health services is yet to be felt by the citizens as the process still faces teething problems that are associated with a new system (Kamano et al., 2022). Exceedingly high utilization rates in Level 4 and 5 health facilities have caused sustained congestion and strain despite efforts by the government to improve the referral system in Kenya.

There could be underlying factors impacting on the uptake of health insurance which remain a big impediment to access to equitable, quality, and responsive health services by the populace. High out of pocket expenditure is a big challenge to accessing health services in Meru Teaching and

Referral Hospital and this easily drives the people into poverty (World Bank Group, 2019). In line with the WHO recommendations, the country has adapted the contributory payments (NHIF) as the main means for financial protection against catastrophic health spending and has given a target of 100% health coverage by 2022 and the Big Four agenda which is inclusive of better health care (KIPPRA, 2016).

With this target, Kenya adopted the global universal health coverage (UHC) tagline of "leaving no one behind" in as far as access to essential health services is concerned (Ministry of Health, 2017). However, in as much as public health insurance has been available in the country since 1966, insurance coverage is estimated at only 19% with NHIF positioned as the main health insurer in Kenya covering about 16% whereas 32 private health insurers collectively cover a mere 3% of the Kenyan population (Barasa, Rogo, Mwaura & Chuma, 2018). The Meru Teaching and Referral Hospital serves as a critical healthcare institution within its local context, catering to the healthcare needs of a diverse population in the Meru region of Kenya. Despite its significance, there exists a gap in understanding the uptake and utilization of the National Health Insurance Fund (NHIF) among patients accessing services at this facility. The NHIF plays a pivotal role in providing financial protection against healthcare expenses, yet little is known about the extent to which patients in Meru Teaching and Referral Hospital are enrolled in and benefit from this insurance scheme. Understanding the uptake rate and factors influencing NHIF enrollment within this specific healthcare setting is crucial for informing targeted interventions to improve access to quality healthcare services and financial risk protection for patients in the region.

The choice of Meru Teaching and Referral Hospital as the study site is justified by several factors. Firstly, the hospital serves as a major healthcare hub in the Meru region, attracting patients from various socio-economic backgrounds and geographical areas. Therefore, studying NHIF uptake within this institution provides insights into the accessibility and utilization of health insurance among a diverse patient population. Secondly, Meru Teaching and Referral Hospital represents a typical example of a healthcare facility facing challenges related to healthcare financing and access, making it a relevant setting for investigating the effectiveness of health insurance schemes in addressing these issues. This study therefore was carried to investigate the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.

1.1.1 National Health Insurance Fund

In Kenya, the importance of establishing a National Health Insurance scheme had been recognized by policymakers as critical almost immediately after independence. It was envisioned to provide health insurance by offering medical cover at costs that would be way below the prevailing actuarially determined market prices that were deemed as out of reach for most socio-economic groups in the country. This was actualized with the establishment of the National Health Insurance Fund in 1966 through an Act of Parliament. Initially, NHIF was an autonomous department under the Ministry of Health, charged with overseeing its own operations, but accountable to the Treasury on fiscal matters. NHIF's sole mandate was to provide an affordable national contributory hospital insurance scheme for all residents in Kenya. Under this Act, all Kenyans between 18-65 years of age could enroll and employers were mandated to deduct premiums from wages and salaries (GoK, 2010).

NHIF covered certain dependents of the primary policy holder automatically, including spouse, children under the age of 18, students (even if over the age of 18), and disabled dependents. Other adult family members require separate premium contributions to be covered. NHIF is responsible for enrolling and registering all eligible members from the formal and informal sectors. The benefits package includes coverage of inpatient expenses with the share of expenses covered determined largely by the type of hospital. The NHIF's hospital network is broken into three tiers of hospitals. At "Contract A" hospitals, which included primarily government hospitals, NHIF beneficiaries receive comprehensive cover with no overall limit on the amount of benefits received. National Health Insurance Fund contracts with about 600 health facilities that are managed by both the public and private sector throughout Kenya. About 150 of these facilities are state-run, while the remaining hospitals are managed by private and mission organizations. Individuals who are members of NHIF are able to access their benefits at any of the hospitals affiliated with NHIF regardless of location.

The National Health Insurance Fund (NHIF) and private insurers have negotiated fixed reimbursement rates for in-patient care. The reimbursement amount varies slightly with the level of provider, the diagnosis, and the type of care required. "Contract A" and "Contract B" providers are typically reimbursed through case-based or fee-for-service provider payments. "Contract C"

providers are reimbursed through a per diem rebate system. Claims are submitted by hospitals directly to the National Health Insurance Fund (NHIF), and then hospitals are paid for procedures and users are reimbursed. Claims are to be reimbursed within 14 days of the claim received. This process is computerized and is designed to be transparent to the providers. The Household Health Expenditure and Utilization survey of 2005 found utilization rates of health care for those with insurance increased between 1990 and 2003 to 77.2% of ill people seeking healthcare, while the national utilization rate increased to 1.92 visits per person annually. In addition, out of pocket expenditure on health care has decreased from about 51% of the funding in 2001 to 36% in 2008. Few substantial results have been seen with regards to disease levels (NHIF, 2015).

In recent years, interest has grown in providing health insurance programs to the poor and vulnerable households throughout the world as a means of increasing access to priority, health services and protecting families from catastrophic health care costs that sometimes lead to loss of meager family assets and sources of livelihoods. Sisko et al. (2019) suggested that uptake of voluntary medical health insurance among 70% of the poor is typically low. Besides, collecting premiums from the poor population who are generally living in the countryside (rural areas) and mainly employed in the informal sector is viewed as challenging.

A special gazette notice dated February 6, 2015 revised NHIF premiums that saw those in employment and earning a gross income of up to KES 5,999 contribute KES 150 per month, the lowest contribution. The self-employed were to contribute KES 500 monthly. The highest monthly contribution was KES 1,700 for those earning KES 100,000 and above. Those earning between KES 8,000 and KES 11,999 were to contribute KES 400 while those earning between KES 12,000 and KES 14,999 contribute a monthly premium of KES 500. Those earning between KES 15,000 and KES 19,999 contribute KES 600 while those earning between KES 20,000 and KES 24,999 have KES 750 deducted from their monthly pay slips. Accordingly, those hardest hit were low-income earners who had to dig deeper into their pockets to make contributions to the National Health Insurance Fund pool. It was yet to be determined how these incremental changes in NHIF cover premiums was received by low-income earners as well as those in the *jua kali* (informal) sector, further making this study not only timely but of utmost necessity at this time when these far-reaching changes are being introduced (Mwaura et al., 2021).

Over the years, the original Act of Parliament has been reviewed to factor in the dynamic health care needs of Kenyans, employment and restructuring of the health sector. One revision of the NHIF Act was in 1988 that upgraded the Fund to a State Corporation. At the apex of its structure is a Board of Directors. It was also mandated with facilitating as many Kenyans as possible to access quality and affordable healthcare to cushion them against escalating medical expenditures against a background of a harsh economic environment. The level of contribution was graduated in proportion to income. Initially it ranged from a minimum of KES 30 to a maximum of KES 320 monthly. However, these rates were also reviewed upwards from 1st April 2015 to cater for the rising costs of healthcare provision in Kenya. The minimum level of contribution was set at KES 150 and the maximum KES 1,700 monthly, also graduated according to income. The self-employed voluntarily pay KES 500 if they want to join the scheme (Wagura, 2019).

In 2023, the Ministry of Health plans to reduce monthly contributions from the current KES 500 to KES 300 in a project dubbed *Afya Bora Mashinani* to strengthen the capacity of the Community Health Promoters (CHPs) who are key in promoting access to sustainable health care at the household level. This was suggested so as to enable access to affordable health care through the Universal Health Coverage (UHC) program as when one registers with NHIF, it will cater for him/her and cover all family members including children (Kazungu, Nonvignon, Quaife & Barasa, 2023).

Prior to devolution, NHIF operations were centralized in Nairobi and the few provincial headquarters, where all payment claims were settled. Thus, personnel of health facilities outside these locations would make monthly journeys to pursue claims. Fortunately, with the advent of a devolved system of government NHIF has decentralized operations and claims processing to Area Offices, thereby enhancing a more effective system that promotes efficiency in settling of claims. Decentralization has also lowered the cost of operations for both members and the about 400 accredited health providers (Mutai, Njoroge & Mwangi, 2021). NHIF membership has 3 million contributors with about 6 million dependents. It has improved continually over the years, with the benefits paid to the members increasing from KES 8.24 billion in 2013 to KES 9.08 billion in 2014, a 10.2% increase. The contributions received also increased by 10% from KES 12.23 billion in 2013, to KES 13.63 billion in 2014. Similarly, the benefits as percentage of contributions increased to 69% in 2014 from 55% in 2008 (Wanjiru, Yitambe & Chomi, 2019).

Among the benefits NHIF members are entitled to include coverage of outpatient and inpatient expenses, typically bed charges, meals, treatment, and drugs. Expenses covered are determined largely by the type of health facilities i.e., hospitals, nursing homes, health centers or dispensaries. In 2015, the government fully acknowledged NHIF as the official vehicle for the successful implementation of universal health coverage for the country (NHIF, 2017). It gazetted increased contribution rates to cater for both in-patient and out-patient cover in an enhanced benefit package partially contributing to increment in revenue (Mohamed, 2019).

1.1.2 Uptake of National Health Insurance Fund among Patients

The concept of uptake, as defined in this study, refers to the act or instance of incorporating health insurance coverage. While the Alma Ata Declaration on Primary Health Care emphasized the importance of primary healthcare (PHC) access at the Geneva Conference of 1978, the significance of PHC in the sub-Saharan African context remains paramount due to the burden of both infectious and non-communicable diseases (NCDs) (WHO, 2018).

PHC serves as a fundamental strategy to enhance overall efficiency and performance within healthcare systems. With proper investment to improve affordability and quality, PHC can serve as a vital instrument for enhancing the population's health status (Asante, 2022). Proper implementation of PHC ensures the provision of accessible, person-focused, comprehensive, and universal basic healthcare services (Kullberg et al., 2019).

In Kenya, the National Health Insurance Fund (NHIF) stands as the primary provider of health insurance, mandated to enhance access to healthcare services. NHIF plays a pivotal role in realizing Universal Health Care (UHC), aligning with the goals outlined in the Kenya Health Sector Strategic and Investment Plan (KHSSP) 2014 – 2017 (MOH, 2014). The core focus of UHC is to achieve equity in healthcare access, ensure service quality, and expand social protection, primarily through prepayment healthcare financing mechanisms designed to share financial risks among the population and prevent catastrophic healthcare expenses that could lead to impoverishment.

The adoption of UHC aims to provide equitable, affordable, and high-quality healthcare services for all, thereby reducing out-of-pocket expenditures. Moreover, states with varying economic

performances are actively promoting health insurance adoption among citizens to offer financial protection against out-of-pocket healthcare expenses (Fiestas Navarrete, Ghislandi, Stuckler & Tediosi, 2019).

Despite efforts to achieve UHC, many countries worldwide still face challenges in its realization. In Africa, a significant number of countries do not provide UHC to their citizens, with weak tax collection mechanisms leading to insufficient healthcare sector allocations. The utilization of health services among citizens significantly improves when financial barriers associated with healthcare costs are reduced, positively impacting healthcare-seeking behavior and promoting timely access to appropriate care (Martinussen & Magnussen, 2019).

In Kenya, significant strides have been made towards achieving UHC, as outlined in the Kenya Health Financing Strategy, the Constitution, and the country's Vision 2030. This health financing strategy is founded on principles of solidarity, risk-sharing, cross-subsidization, and income considerations, aiming to ensure access to a basic package of health services tailored to individual needs. Enhanced transparency within the system will further ensure that users, providers, and purchasers have access to information regarding its operations (Mutai, Njoroge & Mwangi, 2021).

1.1.3 Factors Influencing Consumer Behaviour in the Uptake of a Product (NHIF)

Health insurance systems in many low-and middle-income countries (LMICs), including in Sub-Saharan Africa, are nascent and face challenges in achieving broad population coverage. These challenges include how to extend coverage to the large sector of informal workers present in many LMICs, low re-enrollment rates among clients, mistrust of the public health system and government transparency in managing Social Health Insurance (SHI) systems, and difficulties securing sustainable government funding (Fiestas Navarrete et al., 2019). Further, there is potential for the push towards UHC to increase the health coverage gap between rich and poor if poor populations do not have adequate access to health insurance schemes or cannot afford them when they do (Onwujekwe et al., 2019).

Studies conducted in several Sub-Saharan African countries have demonstrated a significant association between formal sector employment and access to health insurance, in contrast to

employment in the informal sector (Hsieh et al., 2019). This relationship is linked to factors such as low and irregular income, job insecurity, and insurance schemes that may not align with people's needs and preferences (RamPrakash & Lingam, 2021).

Various mechanisms are employed to raise and collect funds by individuals in both the informal and formal sectors. These mechanisms include participation in financial institutions such as SACCOs for those in the formal sector and community-based savings groups, commonly known as 'merry-go-rounds.' Several studies have highlighted the significance of these mechanisms as predictors of participation in health insurance (Wang & Zhou, 2020). These mechanisms enable the people to boost and compile funds for various purposes including payment for insurance premiums, emergencies such as hospital care and funeral costs (Tonkei, 2022).

According to KIPPRA (2016), as outlined in the National Social Health Insurance Strategy Report, mechanisms to enhance accessibility to collection points for individuals in the informal sector include partnering with various organizations that are closer to the population. These organizations may include cooperative societies, welfare organizations, trade associations, and churches, as they are often more effective in collecting contributions compared to NHIF branch offices. These organizations will be contracted and enumerated to offer these services, and others will be licensed to issue or stamp the social health insurance cards. Adequate mechanisms will be put in place to ensure that contributions collected by these organizations are regularly transferred to the NSHIF.

Otieno (2020) opinion was that the uptake of community-based health insurance (CBHI) in low and middle-income countries was determined by demographic and systematic factors of CBHIS. Those with low income, low levels of education, the aged, females and those with a small household size were less likely to undertake CBHIS. Low uptake was also associated with mistrust of the CBHIS and poor health care quality. The study by Kinyua (2013) aimed at determining the influence of demographic factors on the uptake of community-based health financing schemes in the Country. The study reviewed relevant literature by various researchers and institutions on biological factors, level of education, socio cultural, level of income and their influence of the uptake of the CBHF. The findings showed significant barriers which included cost of the premiums, chaotic administration of the district schemes and lack of direct involvement of

informal workers in either the design or the ongoing management of the scheme. Another study by Fenny et al. (2016) on factors influencing the low uptake and renewal of health insurance in Ghana found out that sociocultural and systematic factors were the main determinants of uptake. From the results, low uptake was likely high among the aged, disabled, and other factors: Religion, cultural norms, weak National Health Insurance System, and inadequate health facilities within the vicinity of the individuals.

According to most literature on health insurance, households headed by individuals with higher education tend to have higher enrolment rates in health insurance compared to households with less literate heads (Owino et al., 2020). This understanding is based on the idea that higher education equips individuals with better knowledge about their health, including the advantages of health insurance, thereby increasing the likelihood of enrolment. Additionally, the marital status of the household head has been shown to influence the enrolment of household members. The assumption is that married individuals can pool resources more effectively, enabling them to enrol both themselves and other household members (Kisali, 2021).

In Kenya, economic hardships have pushed 8.8 million or 43 percent of National Health Insurance Fund (NHIF) members to default on monthly contributions, effectively condemning them to out-of-pocket medical expenses. The default partly explains why the insurer missed its KES 90.57 billion targeted premium collections for financial year 2022 (Daily Nation, 2021). The informal sector has also faced financial challenges caused by harsh economic conditions thus making it difficult for members of this sector to make their voluntary contributions to the fund and adverse selection. Registered members who have defaulted on the monthly premiums are usually locked out of utilizing their insurance covered for hospital bills.

This study adopted these four variables: accessibility, awareness, organization capacity, availability of finances as the factors affecting the uptake of National Health Insurance Fund. The mechanisms to increase accessibility to collection points for those in the informal sector to include collection by various organizations that are close to the population which include cooperative societies, welfare organizations, trade associations and churches as they may collect the contributions more effectively than NHIF branch offices. These organizations will be contracted and enumerated to offer these services and others will be licensed to issue or stamp the social health

insurance cards. Adequate mechanisms will be put in place to ensure that the contributions collected by these organizations are transferred regularly to the NHIF. Awareness plays an important role of increasing uptake of health insurance cover. Exposure to the media through reading newspapers, listening to radio, or watching television was associated with having health insurance (Mwaura et al., 2021). A study done by Otieno et al. (2020) discovered that awareness and knowledge about health insurance were associated with determinants of health insurance coverage.

Availability of finances is essential in social and economic determination of health. The level of income defines overall living conditions, psychological functioning and influences health related behavior which leads to effects to an individual's health and minimizes the ability to live a fulfilling life (Kamano et al., 2022). Barasa, Rogo, Mwaura and Chuma (2018) reported that both in developed and developing countries household income is associated with the uptake of health insurance whereby income highly determines the amount of health insurance purchased. In marginalized society especially in majority of the countries, the main barrier of access to health is financial constrain.

1.1.4 Meru Teaching and Referral Hospital

Meru Teaching and Referral Hospital (MeTRH) is a Level 5 public health facility in Meru County located at the heart of Meru Town. MeTRH is under the Department of Health Services in the County Government of Meru. It serves as the referral hospital for Meru County whose population is 1.4 million people and as a regional referral facility for the neighbouring counties of Tharaka Nithi, Isiolo and Marsabit. It offers both outpatient and inpatient services to patients, including two main theatres for major and minor operations. The average daily outpatient attendance is 1,000 patients and the average daily bed occupancy of 150% translates to an average of 450 inpatients daily.

MeTRH has fully fledged departments that run day to day activities of the hospital which include Records, Finance, Information Communication Technology (ICT), Stores, Laundry, Human Resource, Transport, Public Health, Social Work, Kitchen, Security and Maintenance Departments. The hospital has a workforce consisting of various professions who ensure the hospital activities run smoothly.

1.2 Statement of the Research Problem

Health is anchored in Vision 2030 under the social pillar in which Kenya aims to provide an efficient integrated and high-quality affordable health care for all citizens with a priority being given to preventive care at the community and household levels using a decentralized national health care system strategy (Government of Kenya, 2010). The Kenya Health Policy 2014-2030 spells out the organization of health services delivery system and what should be provided at the specific hospitals, geared towards strengthening the referral mechanism in place (Otieno, 2020). There is low uptake of NHIF cover hence many poor and vulnerable households easily resort to risky alternatives such as self-medication, irrational use of over-the-counter antibiotics or use of unqualified medical practitioners including herbalists (traditional "doctors") (Mutai, Njoroge & Mwangi, 2021).

A recent Treasury report on the local health sector noted that as many as 8.8 million NHIF members have not been making monthly contributions mainly due to economic difficulties. NHIF membership stands at 15.4 million but those the Treasury report identified as active stood at 6.7 million, according to the report. Low uptake of health insurance may hinder the members of the population to achieve maximum benefit from these developments towards UHC. Moreover, there is a general tendency of low income and vulnerable rural households resorting to fundraising or sale of family valuables included limited assets to cater for health care costs whenever disease and sickness attacks uninsured families in Meru County (Rimberia, 2022). The amount of out-of-pocket spending on healthcare in Kenya remains high. Currently, 32% percent of total health expenditure in Kenya is out-of-pocket. This drives many people into poverty and poses a barrier to access to healthcare (Rono, 2017).

According to Cheruiyot (2020), the penetration of insurance in Kenya as of 2020 was said to be less than 2.17% against a global average of over 7%. These figures are dismal to say the least. It is also estimated that Kenyan families spend a total of KES 150 billion in out-of-pocket expenditures on health services a year. Lack of health insurance cover limits access to quality and appropriate health care among patients in Meru Teaching and Referral Hospital and their dependents. With the introduction of the daily health insurance subscription scheme, it was largely expected that there would be more subscribers. However, the low uptake of the daily subscription

scheme suggests that there could be some underlying factors among them awareness of the scheme that affects the level of subscription to the health cover package (KNBS, 2019).

Various scholars have sought after factors determining health insurance uptake in Kenya. Maina, Kithuka and Tororei (2016) focused on maternal insurance uptake and found out that marital status and benefits of the policy influenced insurance uptake while income and household size did not influence uptake of insurance. In addition, Ndungu (2015) examined drivers of national health insurance uptake and revealed that information accessibility significantly influences insurance subscription. In a similar study, Namuhisa (2014) concluded that income, level of awareness, benefits, and proximity to NHIF offices significantly influenced participation in health insurance among workers in the informal sector in an urban setting. On the other hand, Mohamed (2019) analyzed the uptake of NHIF and found out that financial capability, awareness level, gender and education level determined the uptake.

Further, Njogu (2019) examined health insurance uptake in rural households in Nyeri and concluded that marital status, age, income, education, financial literacy, and distribution channels predict insurance uptake. Despite the myriad of studies focusing on insurance uptake, and the government's efforts to reform the NHIF to cater for both the formal and informal sectors, for both inpatients and outpatients, there are still persistent concerns when it comes to health insurance uptake in low-income households. The above studies have concentrated on looking at health insurance uptake from the perspective of either urban or rural mostly low income individuals thereby creating a lacunae in the understanding of factors influencing health insurance uptake among a mix of both urban and rural dwellers with diverse economic backgrounds (both high, medium and low income) seeking health services in a major hospital in a predominantly rural setting. This study therefore aimed to investigate the determinants of the uptake of NHIF among patients in Meru Teaching and Referral Hospital, Kenya.

1.3 Objectives of the Study

1.3.1 Broad Objective

The overall objective was to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.

1.3.2 Specific Objectives

i. To establish how accessibility influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.
ii. To examine how awareness influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.
iii. To assess how organization capacity influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.
iv. To determine how the availability of financial resources influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.

1.4 Research Questions

This research was guided by the following questions:

i. To what extent does accessibility influence the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya?
ii. What is the influence of awareness on the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.
iii. How does organization capacity influence the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya?
iv. To what extent does availability of finances influence the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya?

1.5 Justification of the Study

Universal health coverage remains the main objective of the Ministry of Health. However, increasing cost of health care remains the main barrier to achieving this objective even in Kenya where out of pocket expenditure on health stands at 32%. Although studies elsewhere have shown that use of health insurance is the option to providing health care affordably, coverage and utilization of health insurance to finance health is low in most developing countries including Kenya. This study was therefore motivated by acknowledging that there are various factors that influence patients' uptake of health insurance, which are very important in considering the

success of healthcare financing through health insurance, and in reducing overreliance on out-of-pocket payment for healthcare.

1.6 Scope of the Study

The study focus was on the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The unit of analysis was 6,205 patients that sought care at the Meru Teaching and Referral Hospital (MeTRH) (MeTRH Records, 2023). The unit of observation was adult patients with a NHIF cover Data was collected from adult patients attending the hospital and during the months of May and July 2023. The researcher collected primary data using questionnaires. Systematic sampling technique was employed. The study was conducted in a period of seven months.

1.7 Significance of the Study

This study holds significance across multiple domains. For hospital management, the insights gained from understanding the factors influencing patients' adoption of the National Health Insurance Fund (NHIF) at Meru Teaching and Referral Hospital can inform strategic decision-making. By identifying drivers of NHIF uptake, hospital management can develop targeted strategies to enhance health financing within the hospital, ultimately improving healthcare access and delivery.

On the policy front, the findings from this study are valuable for informing policy design within the Ministry of Health, the National Treasury, and other relevant government bodies and development partners. Understanding the determinants of NHIF uptake among patients at Meru Teaching and Referral Hospital provides critical insights into patient needs and preferences. This knowledge can guide the development of policies aimed at strengthening NHIF as a robust healthcare financing scheme, thereby contributing to Kenya's journey towards achieving Universal Health Coverage (UHC).

From an academic perspective, this research contributes to the body of knowledge on health financing, particularly for rural households, including the poor, vulnerable, and marginalized populations. Scholars and policymakers alike can benefit from the insights generated by this

study, informing future research endeavors and policy interventions aimed at improving access to and utilization of NHIF coverage among households facing escalating healthcare costs.

Furthermore, the dissemination of research findings to the leadership of the County Department of Health in Meru, as well as presentation at relevant scientific conferences and inclusion in policy forums such as the Devolution Conference, ensures that the study's insights reach key stakeholders at the national level. This dissemination strategy aims to catalyze discussions and actions aimed at driving Kenya towards the realization of UHC, ultimately benefiting the entire population by improving access to essential healthcare services.

1.8 Chapter Summary

This chapter presented the background of the study, statement of the problem, the objectives of the study, the research questions, justification of the study, the scope of the study, and the significance of the study in line with the determinants of the uptake of National Health Insurance Fund. The next chapter covered the literature review.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covered literature reviewed on the theories guiding the relationship between accessibility, awareness, organization capacity, availability of finances and the uptake of National Health Insurance Fund among patients. The literature covered both local and international sources. The section also covered the summary and research gaps of the literature, and the theoretical and conceptual frameworks guiding the research.

2.2 Theoretical Review

A theoretical framework directs research by defining the variables to measure and the statistical correlations to seek in the context of the study's concerns (Muiruri & Ngari, 2014). This section discussed the many ideas that were proposed to account for the link between the variables in the current research. Self-Determination Theory and Expected Utility (EU) Theory all served as foundations for the study.

2.2.1 Self-Determination Theory (SDT)

Self-Determination Theory (SDT), developed by Edward Deci and Richard Ryan in the 1980s, offers a framework for understanding human motivation and behavior. At its core, SDT posits that individuals have three innate psychological needs: autonomy, competence, and relatedness. Fulfillment of these needs is essential for fostering intrinsic motivation, well-being, and optimal functioning (Deci & Ryan, 1985).

Autonomy, the first pillar of SDT, refers to the fundamental human need to feel a sense of volition and self-endorsement in one's actions. Individuals seek autonomy in their decision-making processes and desire to act in alignment with their values and interests. In the context of healthcare, autonomy manifests as patients' desire for control over their healthcare decisions, treatment options, and healthcare providers. When individuals perceive autonomy in their healthcare choices, they are more likely to engage actively in their treatment and adhere to healthcare recommendations.

Competence, the second component of SDT, reflects the need for individuals to experience a sense of effectiveness and mastery in their interactions with the environment. People strive to develop and demonstrate their capabilities, skills, and talents in various domains of life. In healthcare settings, competence is associated with individuals' confidence in managing their health, understanding medical information, and navigating the healthcare system. When patients feel competent in their ability to engage with healthcare providers and access healthcare services, they are more likely to take proactive steps to maintain their health and well-being.

Relatedness, the third element of SDT, pertains to the need for meaningful connections, social belonging, and supportive relationships with others. Humans are inherently social beings and seek to establish connections with family, friends, and communities. In the context of healthcare, relatedness encompasses patients' interactions with healthcare providers, support from peers and family members, and a sense of belonging within the healthcare system. When individuals feel connected to their healthcare providers and supported by their social networks, they are more likely to engage in health-promoting behaviors and seek necessary healthcare services.

Overall, the theory offers valuable insights into the motivational dynamics underlying individuals' healthcare decisions and behaviors. By recognizing and supporting patients' autonomy, competence, and relatedness needs, healthcare providers and policymakers can foster intrinsic motivation, enhance patient engagement, and promote positive health outcomes.

2.2.2 Expected Utility (EU) Theory

This theory was founded by Nyman (2001). According to the theory, the value of health insurance is the anticipated pay off when ill and not because of the certainty it provides. When consumers pay premium, they give up on income that could have been used to purchase other goods and services. The expectation when they purchase health insurance is that the utility gained from it exceeds its cost in terms of utility foregone from other goods and services that could have been purchased. In this case, insurance is purchased as additional income when in a sick state. At its core, the EU Theory suggests that individuals evaluate potential outcomes of different choices by assigning utility values based on their preferences and beliefs about probabilities. In the context

of the study on the uptake of the National Health Insurance Fund (NHIF) among patients in Meru Teaching and Referral Hospital, the EU Theory offers valuable insights into the decision-making processes regarding health insurance enrollment.

Nyman's theory is best explained by two scenarios. In the first scenario an individual sacrifices part of his disposable income to pay health insurance premiums. In the event of sickness or ill state, the cost of treatment will be taken care of by the health insurance cover, at times the cost being more than the premiums paid, representing a gain. In the second scenario, an individual who does not have a health insurance – and therefore does not pay premium, hence more disposable income, will eventually shoulder the burden of the cost of treatment when sickness strikes without a cover to fall back to. The cost of treatment might wipe out all the gains that he had made in terms of non-payment of premiums.

Manning and Marquis (1996) stated that under expected utility theory, insurance demand is 'a choice between an uncertain loss that occurs with a probability when uninsured and a certain loss like paying a premium'. The theory assumes that people are risk averse and make choices between taking a risk that has different implications on wealth. At the time of insurance choice, households are uncertain whether they will be ill or not, and of the related financial consequences. Insurance reduces this uncertainty. Explaining this further, Hsiao et al. (2006) argue that the choice by rural residents to join or not join a CBHI is a discrete decision process consistent with qualitative choice model and that the farmers' choice of joining a community-based health insurance scheme in rural China was grounded in the comparison of the expected utility of having health insurance versus having none. Despite these criticisms, expected utility is most commonly used in models of decision making under risk (Marquis & Holmer, 1996).

The theory of expected utility maximization postulated that between competing alternatives, an individual's decision will be guided by the choice that confers the highest total expected utility. In the context of health insurance, there are two possible states, either healthy or sick. If sick, an individual or family had to invest in health inputs such as healthcare, diet, exercise in order to increase his health capital stock and achieve a healthy output. Health inputs such as healthcare can either be paid by current income, wealth or by a health insurance firm. However, health insurance can only be utilized in the event of ill health. Expected utility theory addresses the outcomes

whether one is healthy or sick. In instances where an individual is healthy then utilization of healthcare will decrease as well as premium.

Additionally, the decision-making process involves assessing the expected utility values when choosing between risky or uncertain prospects. These are the products of the aggregated utility values of outcomes and their respective probabilities (Harrison, 1994). Owing to the fact that voluntary decision-making is primarily based on expected utility, it is apparent that this theory provided a solid foundation for explaining the reasons why informal sector workers opt in or out of health insurance schemes.

Schneider (2004) posited that the theory can be adapted to the enrolment to health insurance by consumers through the consideration of outcomes of enrolment to a scheme against other alternatives and arriving to a conclusion based on the expected maximum utility. Wu and Gonzalez (1996) affirmed that the Expected Utility Theory has several limitations. Firstly, it fails to make provisions for how contextual characteristics influence the choices of decision makers. Secondly, decision makers are unable to make any cognitive simplifications in their selections, thereby only managing to satisfy rather than to maximize. Indeed, the lack of adequate awareness about the options of offer makes it difficult for informal workers to make decisions that will enable the maximization of utility so have to settle for satisfaction.

There are three critical characteristics of the theory, and these include: the processes associated with decision made in conditions of risk and uncertainty; the assignment of linearity of decision weights to options; and fixed asset positional judgements. As a direct consequence of these assumptions, the theory always forecasts the selection of better alternatives (Sharpe, 2007). Briggs (2014) supposed that under expected theory economists used to think that rigid interpretations were always applicable to rational agents, however, they now hold the view that the theory is at best a useful and perceptive tool of approximation. Indeed, experience has shown that peoples' decision-making process is riddled with systematic violations and fabrications. Kahneman and Tversky (1979) demonstrated using their prospect theory that there are inconsistencies whenever individuals express their preferences among the same choices, depending on the presentation of these choices.

Firstly, the EU Theory highlights the importance of risk perception in decision-making. Individuals assess the potential risks and benefits of different options based on their subjective perceptions of uncertainty. In the case of health insurance enrollment, patients may evaluate the risk of incurring high medical expenses without coverage, such as unexpected hospitalizations or costly treatments for chronic conditions. Understanding patients' risk perceptions can provide insights into their willingness to enroll in NHIF and their preferences for financial protection against healthcare expenses.

Secondly, the EU Theory emphasizes utility maximization as a guiding principle in decision-making. Individuals seek to maximize their expected utility by weighing the potential benefits of different choices against their associated costs. In the context of health insurance, patients may consider the benefits of NHIF coverage, such as access to healthcare services without financial strain, alongside the costs of premiums and potential out-of-pocket expenses. By assessing the expected utility of enrolling in NHIF, patients can make informed decisions about participation in the insurance scheme.

Lastly, the EU Theory acknowledges the influence of cognitive biases and heuristics on decision-making processes. Prospect Theory, an extension of the EU Theory developed by Daniel Kahneman and Amos Tversky, suggests that individuals' decisions are often influenced by biases such as loss aversion and reference dependence. In the context of health insurance, patients may exhibit loss aversion by placing greater weight on the potential losses associated with medical expenses without coverage than on the potential gains of NHIF benefits. Understanding these cognitive biases can inform strategies to promote enrollment and address barriers to participation in NHIF.

2.3 Empirical Review

Key empirical papers were discussed analytically to bring out the research gap in this study. An empirical review was done to clearly bring out any contradictions or inadequacies in the knowledge of the phenomena, or of relationships between constructs, which makes the study necessary. This section entailed literature on the influence of accessibility, awareness, organization capacity, availability of finances on uptake of National Health Insurance Fund among patients.

2.3.1 Accessibility Factors and the Uptake of National Health Insurance Fund among Patients

A study conducted by Dang, Dang and Vallish (2021), pinpointed that the universal health care systems vary according to the extent of government involvement in providing care and health insurance. Onwujekwe et al. (2019) argued that in some countries such as the United Kingdom (UK), Spain and Italy, the government has a high degree of involvement in the commissioning or delivery of health care services and access is based on residence rights not on the purchase of insurance. Others have a much more pluralistic delivery system based on obligatory health with contributory insurance rates related to salaries or income, and usually funded by the employers and beneficiaries jointly. These insurance-based systems, tend to reimburse private or public medical providers often at heavily regulated rates through mutual or publicly owned medical insurers.

Many of these regulatory initiatives particularly in the aspect of health insurance underwriting are designed to achieve specific policy goals, such as controlling escalating health care costs or expanding the availability of health coverage, particularly for the most at-risk or vulnerable members of the society. Achieving these vital goals invariably requires trade-offs, but policy makers rarely make these trade-offs as explicit as should be the case. For instance, in the United States, Yusuf et al. (2019) mainly addresses the access to health insurance coverage and assures all Americans who need coverage of health insurance. It was however not clear how the legislation will impact the cost of health insurance, especially premiums and out-of-pocket expenses borne by individual Americans. It was likely that the costs will continue to skyrocket for the unforeseeable future. How much health insurance will cost individual Americans will depend on among other parameters, the age, the condition of one's health, where in the country one lives in, his/her income levels and job status (WHO, 2022).

In Kenya, KIPPRA (2016) indicate that the National Health Insurance Fund (NHIF) is the primary provider of health insurance in Kenya with a mandate to enable all Kenyans to access quality and affordable health services. The NHIF was established in 1966 under CAP 255 of the Laws of Kenya to be run by an Advisory Council appointed by the Minister of Health. At the initial stages, NHIF catered for salaried employees earning KES 1,000 and above per month, making a monthly

contribution of KES 20. In 1972 an amendment was made to incorporate voluntary members (self-employed) at a monthly contribution of KES 60.

NHIF was restructured by the repeal of the National Hospital Insurance Act (CAP 255) of 1966 and the enactment of the National Health Insurance Fund Act No. 9 in 1998. This new law made the NHIF an autonomous parastatal, separating it from the direct control of the Ministry of Health. The Fund was to be governed by a Board of Directors with representatives from civil society, employers, and local governments. Members of NHIF Board of Directors included the following: Permanent Secretary – Ministry of Health, Workers' Union Representative from Central Organization of Trade Unions (COTU), Directorate of Personnel Management, Representative from Kenya National Union of Teachers (KNUT), Director of Medical Services, Representatives of the Kenya National Farmers Union, Federation of Kenya Employers, Association of Kenya Insurers, Christian Health Association of Kenya, NGOs and the Kenya Medical Association.

The Health Insurance Act of 1998 makes no distinction between formal and informal sector and indicates that membership shall be mandatory for all Kenyans at least 18 years of age. In practice, however, while Kenya has achieved high levels of coverage of the formal sector, coverage of the informal sector has proved more challenging. The National Health Insurance Fund (NHIF) requires compulsory membership for all salaried employees with premium contributions automatically deducted through payroll. Contributions are calculated on a graduated scale based on income, with a majority contributing between KES 30 to KES 320 per month. For the self-employed and others in the informal sector, membership is contributory and is available for a fixed premium of KES 160 per month. To be a member of the National Health Insurance Fund (NHIF), one must simply be a Kenyan resident aged 18 or older. The adoption of new NHIF premium rates resulted in the least paid Kenya earning KES 5,999 paying a monthly premium of KES 150 with those earning over KES 100,000 paying a monthly premium of KES 1,700 (Tonkei, 2022).

Mutai (2021) determined the influence that accessibility factors have on uptake of social insurance daily payment plan. The study adopted a cross-sectional descriptive design and targeted 5,000 Bodaboda operators registered with Saccos in Eldoret town. The Sacco officials were also included in the population. A cohort of 263 people was picked as portion of the information set

using the convenience sampling for the Bodaboda riders while purposive sampling was used for the Sacco officials and for forming the focus group discussions. To get information, the analysts utilized a survey and a focus group discourse layout. Conceptual substance examination was utilized to evaluate subjective information from focus group sessions. The findings revealed that accessibility factors (OR. 2.222, 95% CI = 1.426 – 3.642) significantly influenced uptake of social health insurance daily payment strategy.

2.3.2 Awareness and the Uptake of National Health Insurance Fund among Patients

A comprehensive insight of one's healthcare concerns, as well as more profound recognizing of risk and mitigating components for healthcare, is included in cognizance. In a setting of healthcare assurance interest in low-income countries, it was found that the worldview of protection, which involves paying cash in exchange for an obscure future return, is generally new in these nations. When no payout or claim happens, recently insured people may anticipate their premiums to be refunded, requiring comprehensive protections awareness instruction and utilize of peers to disseminate data around protections services. A qualitative study in Kenya by Barasa, Rogo, Mwaura and Chuma (2018) found that health insurance firms workplaces were concentrated in urban regions, preventing countryside inhabitants from enlisting in health protections plans.

Fadlallah et al. (2018) examined the troubles of building up protections among the destitute and informal sector populaces in low-income nations, noticing that it is prudent to comprehend the beliefs of the target communities to influence them that health protections give money-related security. They observe that informal sector societies are by and large unacquainted with the system of wellbeing security and could be skeptical of coverage due to prior encounters of similar sorts of problems that required payment of cash. Insurance penetration in these populations requires the need to collaborate with trusted community leaders, community-based groups, and microfinance organizations. Ordinary communication systems may not be fruitful in drawing nearer the destitution stricken, rural, and informal sectors in developing nations, requiring the improvement of successful messages for health cover founded around benefits of health-care coverage through social showcasing strategies such as the utilize of grassroots teams to talk to residents of the area about the benefits of wellbeing security. In India, the micro-insurance institute enrolls trained

health protections moderators to conduct programs for health protections instruction and group exercises (Moorkens et al., 2017).

Insurance showcasing to the poor is troublesome since, indeed for those who have had get to insurance; their experiences are habitually unfavorable due to delays in preparing claims as well as denied claims. According to Al-Hanawi, Vaidya, Alsharqi and Onwujekwe (2018), low-income people with low levels of education who are living paycheck to paycheck may not get a handle on why they ought to contribute the limited cash they have to mitigate future occasions that may or may not materialize. As a result, specific information, education, and communication is required to raise awareness of health scope arrangements. To combat unfavorable anti-insurance reasons, special communications must underline principal concepts such as togetherness, inspiration, trust, and social security, whereas educating the needy that they are vulnerable and would be worse off in the event that risks were not overseen by protections. Straightforward and low-tech strategies such as roadshows, film, pictorial, and video introduction can be utilized to disseminate information on health cover. During the social showcasing process potential clients can be helped to arrive at the conclusion that health emergencies can entail calamitous costs and how protections might offer assistance to them oversee those dangers (Fleischmann-Struzek et al., 2018).

To better comprehend the variables that contribute to low health protections appropriation and membership costs, Maharashtra State in India performed a study to evaluate people's awareness of protections terms and their degree of insurance information (Kondo, Rosenberg & World Health Organization, 2018). Low enrolment and renewal were driven by a need of information on how the scheme worked and a poor comprehension of the insurance concept, with the lion's share of respondents demonstrating a need of data on how to utilize the insurance. Also enlisted clients were less likely to renew their insurance when the benefits obtained were less than the protections premiums paid. The study uncovered the need of sustained communication and the physical nearness of insurance operators within the field to provide data on insurance items through progressive awareness campaigns. Smith, Haustein, Mongeon, Shu, Ridde and Larivière (2017) conducted a study on wellbeing insurance understanding among inhabitants of Hyderabad, Andhra Pradesh, and concluded that: 65.5% had no thought as to what it was. It was found that 22% of males were aware of health protections, though only 11.5% of females were. In terms of

work status, it was found that self-employed individuals were less learned around health protections than those employed by the government or private businesses.

Higher-educated individuals were more likely to be aware of health protections. To extend people's comprehension of protections, the analyst suggested growing successful data and communication activities. The objective of a study conducted in Bangladesh that centered on informal sector employees was to see into the impact of giving education on health protections by holding week after week group dialogs on health use and protections. The study's primary objective was to see whether case proficiency gaps and a need of information impacted informal sector workers' eagerness to pay. When comparing unplanned segment workers who participated in the dialogs to the few who did not, the willingness to pay was 33.8 percent higher. The test's overall result was that such approaches can be utilized to raise interest for healthcare security by delivering messaging that includes wellness pooling, medical policy, payment packaging, and cohesion fortitude.

Mwaura et al. (2021) looked at the components that impact health protections uptake centering on NHIF enrollment. Lack of awareness of enrolment strategies and essential protections standards was highlighted as a key impediment to enrollment within the study, which included interviews with individuals of taxi affiliations, farmers, and self-help groups from different parts of the country. Numerous interviewees had never heard of health protections and appeared to accept that on the off chance that they had not been sick for a long time, they would be reimbursed for their installments, illustrating their need of information of health protections as a means of amassing and spreading risks. It was decided that informal sector workers were unaware of the NHIF but were willing to enroll in the event that precise and well-packaged data was displayed to individuals of different educational levels.

A past study by Kamano et al. (2022) analyzing variables influencing request for health protections in Kenya found that numerous Kenyans, eminently those within the casual segment, have never heard of health protections. Nevertheless, impressive breakthroughs in data and communications innovation, marked by a developing social media space as well as conventional media outlets, have happened over the past twelve years, and it was broadly anticipated that this would have an impact on health protections awareness, especially among informal sector workers

such as the bodaboda industry. Existing research, however, have not looked into this perspective of health protections uptake, particularly in packages just like the NHIF day by day membership frameworks.

Ochieng (2015) investigated the extent to which awareness influence NHIF uptake among rural households in Kasipul Division, Rachuonyo Sub-County, Homa Bay County. The target population for this study was rural households drawn from Rachuonyo South District's Kasipul Division in Homa Bay County. Descriptive study design is adopted while stratified random sampling method was applied to select the respondents according to the different administrative locations, they come from within Kasipul Division. In this study, the sample size was drawn using the Morgan Table basing the size of the actual population as per 2009 national population census report. The data collection tools for this study included questionnaires with both closed and open-ended questions which shall be reviewed, cleaned and coded to minimize errors and enable easy entry and analysis. Statistical Package for Social Sciences (SPSS) version 20 aided by a computer was used to organize the data and carry out statistical analysis. At univariate level, descriptive analysis using frequencies and percentages was carried out while at bivariate level, multinomial logistic regression was carried out to determine the association between the dependent and independent variables at 5% level of significance. Besides, the study was valid and reliable in taking the desired measures to ensure data validity and reliability. The most effective and common product marketing and sales strategy was found out to be through local hospitals.

2.3.3 Organization Capacity and the Uptake of National Health Insurance Fund among Patients

Organizational capacity refers to a health care institutions' capability to deliver services and products that not only satisfy present customer expectations, but continually anticipate future marketplace opportunities. The health care structure broadly includes the structural facilities (hospitals health centers, dispensaries, and clinics), human resources such as doctors, nurses, clinicians and paramedical staff among others and other resources that create the capacity to provide health services. Structural facilities and their unique characteristics are expected to influence the quality of health care services. One perspective in the accreditation of health facilities is the analysis of how adequate the facility is structurally, staffing levels, including on-

call staff, technology facilities, equipment, and support services (laboratory, pharmacy, radiology). These structural features as well as resources of the health care facilities and institutions are key foundation upon which quality health care services are provided and which enhance uptake of health services (World Health Organization, 2017).

Growth of technology can be singled out as most significant of all the factors that drive up healthcare costs though it has many benefits. There are numerous examples of advancement in technologies that have contributed towards improvements in patient care. However, thorough technological assessment should be performed before embracing a new technology to determine its risk benefits as illustrated by randomized controlled trials. Apparently currently the healthcare system rarely emphasizes the need for evidence of benefit before widespread diffusion of new technology (Munge, Mulupi, Barasa & Chuma, 2018). Currently, a rapid proliferation of technologies for both diagnosis and treatment such as increase in imaging precision including cardiac imaging has increased by 24 percent per year over the past decade (World Health Organization, 2022).

Wagura (2019) sought to assess the influence of health facility organization capacity associated with NHIF and health facilities on the uptake of NHIF primary care scheme. The study adopted a cross-sectional research design targeting 120 service providers from 60 health facilities as well as getting key information about the scheme from officers in NHIF office managing the scheme as key informants. A random sample of 96 service providers was drawn from 48 health facilities and 2 officers from NHIF Nakuru branch. Data was collected using a structured questionnaire and an in-depth guide. Quantitative data was analyzed using descriptive and inferential statistics with the aid of Statistical Package for Social Sciences version 21.0 while content analysis was used to analyze qualitative data. Pearson correlation coefficient between health facility organization capacity on the uptake of NHIF scheme was not significant ($r=.109$, $p<.05$). Thus, it was concluded that variations in the level of the health facility organization capacity was independent of the uptake of NHIF primary care scheme.

2.3.4 Availability of Finances and the Uptake of National Health Insurance Fund among Patients

Enrolment of health insurance coverage was affected by the availability of finances, for example, low level of income and financial literacy. Dependence on out-of-pocket payment for health care may lead poor households to avoid health expenditure and risk pooling mechanisms that have been recommended to lessen such charges for households such as in Bangladesh where approximately 88% of the population depends on work in the informal sector and were estimated to have low willingness to pay for community based health insurance (CBHI) especially among the three categories of urban informal workers, rickshaw-pullers, shopkeepers and restaurants workers (WHO, 2018).

In another study on willingness to pay for Community Based Health Insurance (CBHI) among informal sectors, employees in urban Bangladesh, major key determinants of willingness to pay identified were monthly income, educational level, occupation, and geographical location (Asante, 2022). Individuals with only primary education had 26.9% lower willingness to pay than those with higher education levels and willingness to pay increased by 0.196% for every 1% rise in monthly income (Martinussen & Magnussen, 2019). Those with higher educational levels tend to subscribe to health insurance coverage more than with lower educational levels since they prepare for future contingencies.

Income is the most important social and economic determinant of health, since the level of income determines overall living conditions, psychological functioning, and influences health related behavior such as food security, housing, participation in cultural and educational activities, which leads to effects to one's health and lessens the ability to live a fulfilling life (Yusuf et al., 2019). In recent and past studies, household income in both developed and developing countries has a positive association with the probability of buying health insurance where income significantly determines the amount of health insurance purchased (Kreutzburg et al., 2020).

One of the major barriers of access to health for marginalized sections of society in many countries is financial constraints. Approximately 1.3 billion poor worldwide have no access to health services because they cannot afford to pay at the time they need it (Dror & Preker, 2002) which leads to those who must use the services to suffer financial hardship and impoverishment since they have to pay (WHO, 2010). Sisko et al. (2019) determined that around 5% of Latin American households spend 40% of non-subsistence income on medical care each year while for households

in India paying for hospitalization, 40% fall into poverty due to healthcare spending. The activities in the informal sector are linked with inadequate income maintenance and income generating activities that in turn reinforces poverty conditions.

According to WHO (2018), though the informal sector contributes significantly to the economy of many countries in the world especially in terms of employment, its mainly characterized by low productivity and low wages, poor working conditions, and long working hours and therefore there is need to enhance productivity and incomes in order to tackle the poverty problem. In the Kenyan situation according to the Kenya National Bureau of Statistics (KNBS) the population in Kenya was 45 million (KNBS, 2019) where more than 4 out of 10 people i.e. 46.6% of the population live on less than a dollar a day and nearly half of this group is considered absolutely poor. Poverty is a major driver of poor health status while at the same time poor health status drives the poor deeper into poverty (WHO, 2018).

The mode of contribution to NHIF is usually the worker's salary where the contributions by those in the informal sector is a flat rate of about KES 160 per month or KES 1,920 per year. In terms of premium collection, the challenge faced by many African countries in implementing the social health security scheme is coming up with modalities for collecting contributions from the large proportion of the population working in the informal sector unlike those in the formal sector whose premiums are collected through payroll deduction. Assessing incomes and collecting income taxes from workers employed in the informal sector is also challenging (Kullberg et al., 2019).

In sub-Saharan Africa studies show that those employed in the formal sector are more likely to have health insurance compared to those in the informal sector (Tonkei, 2022). This was attributed to factors such as low and non-regular income, insecure employment and factors associated with the insurance scheme that are not in synch with people's needs and preference. There are different mechanisms used to raise and collect funds by people in the formal and informal sector which include participation in microfinance institutions such as savings and credit cooperative organizations called SACCOs for those in the formal sector and community-based savings groups called merry go rounds which according to several studies are important predictors of participation in health insurance (Onwujekwe et al., 2019). These institutions enable the members to raise and

collect funds for various purposes including payment for insurance premiums, emergencies such as hospital care and funeral costs. These were one of the mechanisms that were recommended by KNBS (2015) during the evaluation of NHIF operations as a means of collecting premiums from participants in the informal sector.

Wasike (2020) aimed at establishing determinants of health care insurance uptake among households in Kibera informal settlement, Nairobi County. A cross-sectional study was implemented in 166 systematically sampled households from approximately 2,400 residents from one randomly selected village (Makina) out of the 12 villages within Kibera slum. A semi-structured questionnaire was administered to each household head, data was analyzed by descriptive statistics while figure and tables were utilized to present the results. Standard univariable logistic regression model was utilized to test the association between proportion of health insurance uptake and independent variables. The proportion of respondents who had taken up health insurance in the informal settlement were 27.1% (n=45). Significant relationships ($p<0.005$) between health insurance enrollment and measured factors (measured as odds ratios (ORs)) were obtained as follows: compared to married respondents (OR=1), single, combined separated &divorced and widowed respondents were 68%, 86%, 62% respectively less likely to own medical insurance. Respondents who had attained post-secondary, secondary and primary education were 11.3 (95% CI, 2.25, 56.59; P=0.014), 2.3 (95% CI, 0.72, 7.3) and 1.6 (95% CI, 0.57, 4.26) times more likely to take up insurance compared to those with no formal education. Respondents working in the informal employment sector were 96% (95% CI, 0.00, 0.32; P=0.0001) were negative significantly associated with health insurance program. About a quarter (n=39, 23.5%) were indebted from health care expenses. In this study there was high distribution of slum residents (73%) with no uptake of health insurance as compared to the health financing strategy scheme 2007 whose coverage was 60-80%. Modifiable socio-economic factors dominated possible reasons for uptake/ non-uptake of health insurance.

2.4 Conceptual Framework

The conceptual framework helped to outline the dependent, as well as the independent variables aimed at providing guidance to the study. The variables of focus on the relationship between the

accessibility, awareness, organization capacity, availability of finances and the uptake of National Health Insurance Fund among patients. Figure 1 displayed the conceptual framework.

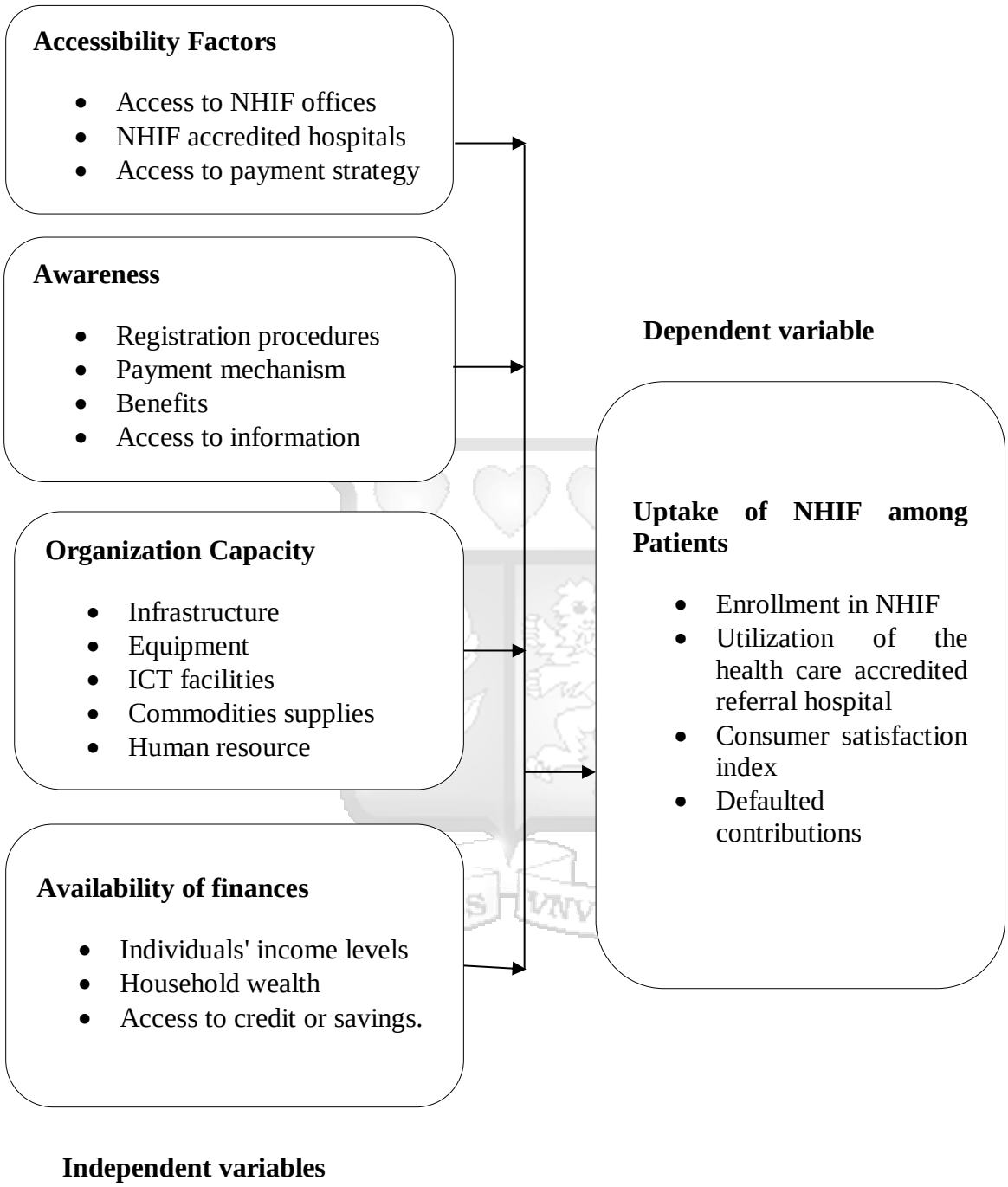

Figure 1: Conceptual Framework

2.5 Summary of Knowledge Gaps

Despite the attempts to provide empirical evidence for the theoretical perspectives associated with organizational learning and competitive advantage, the studies have had methodological, conceptual, and practical limitations that impact on generalizability. Some of the studies demonstrated methodological inadequacies. Some studies were limited by survey data being based on self-reports, which have the potential of being subject to social desirability bias. Additionally, the cross-sectional nature of most studies only allowed them to analyze a specific situation at a specific moment in time in the sampled organizations, without looking at their overall conduct through time. Similarly, the correlational approach employed by most studies using structural equation modeling did not allow for conclusions to be drawn from causal inference for most variables studied. Some studies lacked objective measure for variables such as organizational learning. Table 2.1 below presented a summary of empirical review discussed above.

Table 2. 1: Summary of Literature Review and Research Gaps

Authors	Focus of the study	Methodology	Findings	Gaps	Focus of the Current Study
Dror, Hossain, Majumdar, Pérez Koehlmoos, John and Panda (2016)	What factors affect voluntary uptake of community-based health insurance schemes in low-and middle-income countries? A systematic review and meta-analysis.	Following PRISMA protocol, the study conducted a comprehensive search of academic and gray literature, including academic databases in social science, economics and medical sciences and other electronic.	A higher prevalence of chronic conditions or the perception that healthcare is of good quality and nearby act as factors enhancing enrolment. The perception that services are distant or deficient leads to lower enrolments.	The study presented a methodological gap	The study adopted a quantitative design, explanatory cross-sectional survey design
Fadlallah et al. (2018)	Barriers and facilitators to implementation, uptake, and sustainability of community-based health insurance schemes in low-and middle-income countries: a systematic review.	The study included both quantitative and qualitative studies written in English language and published after year 1992	At the delivery level, accessibility of facilities, facility environment, and health personnel influenced enrollment, service utilization and dropout rates.	The study did not focus on the aspect of uptake alone	The study focused on the aspect of uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital
Akokuwebe and Idemudia (2022)	A Comparative Cross-Sectional Study of the Prevalence and Determinants of Health Insurance Coverage in Nigeria	This was a cross-sectional study	Health insurance coverage was low in both countries and independently associated with socio-demographic	The study presented a contextual gap as it was done in Nigeria and South Africa	The study was done in Kenya

	and South Africa: A Multi-Country Analysis of Demographic Health Surveys		factors such as education, wealth and employment.		
Kalolo, Gautier, Radermacher, Srivastava, Meshack and De Allegri (2021)	Factors influencing variation in implementation outcomes of the redesigned community health fund in the Dodoma region of Tanzania: a mixed-methods study	The study adopted a mixed-methods design	The study demonstrates that assessing the implementation processes helps to detect implementation weaknesses and therefore address such weaknesses as the interventions are implemented or rolled out to other settings.	The study was done in Tanzania	The study was done in Kenya
Wasike (2020)	Determinants of uptake of Health care insurance among households in Kibera Informal settlement, Nairobi County	A cross-sectional study was implemented	Modifiable socio-economic factors dominated possible reasons for uptake/ non-uptake of health insurance. Thus, measures to improve households' socio-economic status are needed in settings such as Kibera informal settlements.	The study presented a contextual gap as its focus was on Kibera Informal settlement	The research sought to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya
Namuhisa (2014)	Determinants of uptake of National	Descriptive study design was adopted	In the findings only 32% of respondents	The study presented a methodological gap	The research sought to

	Health Insurance Fund scheme by the informal sector in Nairobi County, Kenya		were enrolled in NHIF scheme, while 7.1% were enrolled in another type of health scheme.	as it adopted a different design from the current study	establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya
Mukhwana, Ngaira and Mutai (2015)	Determinants of Uptake and Utilization of National Health Insurance Fund Medical Cover by People in the Informal Sector in Kakamega County, Kenya	A cross-sectional study was adopted	Rigid scheme design features create difficulties for people in informal sector to participate.	The study had a different scope from the current study as it looked at people in the Informal Sector	The research sought to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya
Mohamed (2020)	Determining Factors to Uptake of National Health Insurance Fund Among Members of Moyale Constituency, Kenya	The study adopted a cross-sectional study design	The study findings concluded that Economic factors had a significant relationship with uptake of NHIF as well as other variables, demographic factors and financial factors.	The study did not investigate the same variables as in the current study	The research sought to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya
Ochieng (2015)	Factors influencing uptake of National	Descriptive study design is adopted	Financial affordability was	The study was limited to rural	The research sought to

	Health Insurance Fund cover by rural households in Kasipul division, Rachuonyo south sub county, Homa Bay county		seen as being a major issue with NHIF with a majority of respondents saying that their inability to meet monthly NHIF subscriptions had incapacitated their ability to take up NHIF cover.	households in Kasipul division	establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya
Mutai (2021)	Determinants of Uptake of Social Health Insurance Daily Payment Strategy among Motorcycle Taxisin Eldoret Town, Uasin Gishu County, Kenya	The study adopted a cross-sectional descriptive design	The findings also revealed that accessibility factors (OR. 2.222, 95% CI = 1.426 – 3.642) significantly influenced uptake of social health insurance daily payment strategy.	The study did not focus on NHIF	The research sought to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya

2.6 Operationalization of study variables

The study sought to establish the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. Table 2.2 displayed the operationalization of the variables.

Table 2. 2: Operationalization of the Variables

Objectives	Type of Variable	Indicator	Measuring of	Study informing

			Indicators	operationalization
To establish how accessibility influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.	Independent	accessibility	Access to NHIF offices NHIF accredited hospitals Access to payment strategy	Namuhisa (2014); Nyorera and Okibo (2015); Masengeli, Mwaura-Tenambergen, Mutai and Simiyu (2017)
To examine how awareness influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.	Independent	awareness	Registration Procedures Payment Mechanism Benefits Access to Information	Namuhisa (2014); Nyorera and Okibo (2015); Masengeli, Mwaura-tenambergen, Mutai and Simiyu (2017)
To assess how organization capacity influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.	Independent	organization capacity	Infrastructure Equipment ICT facilities Commodities supplies Human resource	Wagura (2019)
To determine the influence of availability of finances on the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.	Independent	availability of finances	Individuals' income levels Household wealth Access to credit or savings.	Ochieng (2015); Mohamed (2020)

	Dependent	Uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.		Mutai (2021)

2.7 Chapter Summary

This chapter reviewed pertinent literature that was linked to and congruent with the study's objectives. Significant topics and practical challenges were raised and rigorously evaluated to ascertain the present state of knowledge. This part was critical because it identified the information that connected this study to previous studies and the areas that future studies should continue to examine in order to advance knowledge. The next chapter presented the research methodology.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the methodology to be adopted while conducting the proposed study. It entailed the research design, study area and population, selection of study participants, inclusion and exclusion criteria, sampling, data collection, management and analysis and finally ethical considerations.

3.2 Research Philosophy

This study used a positivist research philosophy. Positivistic research philosophy is based on quantitative information collected from respondents. Positivism is an epistemological philosophy that claims that observation is based on an objective criterion rather than a subjective one, and also that the observer is independent from what is being studied (Creswell & Clark, 2017).

Positivism is objective, deductive and aims at falsifying research hypothesis and is mainly concern with theory testing. It is further guided by the philosophy that, one reality exists, though as a result of limitations of humanity it may be known imperfectly and within the context of probability can be discovered by researchers (Gorard, 2018). The positivist tradition stressed the importance of doing quantitative research such as large-scale surveys in order to get an overview of society as a whole and to uncover social trends, such as the relationship between educational achievement and social class. The chief strength and advantage of a positivist approach is the vigorous process of setting hypotheses, of empirical experimentation to test these hypotheses, of deep analysis to measure the results, and then the ability to codify the results in a set of laws and predictions (Bell, Harley & Bryman, 2022).

This study collected primary data through questionnaire and tested the data through both descriptive statistics and inferential analysis. In line with objectivity tenet of positivism, this study carried out an objective analysis of the collected data to make inference. Therefore, creating and testing hypothesis through statistical techniques and generating the explanation of the resulting findings matched the philosophy of positivism.

3.3 Study Design

A research design is a blueprint, plan or roadmap for carrying out an empirical investigation with absolute control over parameters that are capable of interfering with the validity of the outcome (Plomp, 2018).

This study followed an explanatory cross-sectional survey design. Explanatory study established causal relationships between variables. Thus, it attempted to clarify how and why there is a relationship between two or more aspects of a situation or phenomenon. According to Rahi (2017), explanatory research is about studying a situation or a problem to explain the relationships between variables. Explanatory cross-sectional survey design used numerical data to explore relationships between two or more variables. If the relationship exists between variables, it implies that scores on one variable are associated with or vary with the scores on another variable (Ghauri, Grønhaug & Strange, 2020).

Explanatory cross-sectional survey design does not specify cause-and-effect relationships between variables under consideration. It merely specifies concomitant variations in the scores on the variables (Snyder, 2019).

The choice of the explanatory cross-sectional survey design was deliberate and aligned with the research objectives for several reasons. Firstly, this design allowed for the establishment of causal relationships between variables, thereby providing insights into how and why certain factors influence the uptake of the National Health Insurance Fund (NHIF) among patients. As the study aimed to elucidate the determinants of NHIF uptake, the explanatory nature of this design was essential in exploring the underlying mechanisms driving patients' decisions to enrol in health insurance.

Additionally, the explanatory cross-sectional survey design facilitated the examination of relationships between multiple variables within a specific timeframe. By collecting data at a single point in time, the study could capture a snapshot of the relationships between key variables of interest, such as accessibility, awareness, organization capacity, and availability of finances. This approach was particularly relevant for investigating the complex interplay of factors influencing NHIF uptake among patients attending Meru Teaching and Referral Hospital.

Moreover, the cross-sectional nature of the survey design allowed for the efficient collection of data from a large and diverse sample of patients. Given the diverse patient demographic served by Meru Teaching and Referral Hospital, a cross-sectional survey design provided a comprehensive overview of NHIF enrollment patterns across different patient groups. This broad scope enhanced the generalizability of the study findings and enabled the identification of common trends and patterns in NHIF uptake among patients.

3.4 Study Area and Population

The study focused on the Meru Teaching and Referral Hospital (MeTRH), which holds a pivotal role as the only level 5 and county referral hospital in Meru County, serving a population of approximately 1.4 million people. Situated as the busiest healthcare facility in the county, MeTRH plays a crucial role in providing comprehensive healthcare services to the residents of Meru County. Notably, MeTRH is also distinguished as the sole hospital in the county with an officially constituted board appointed by the county Government of Meru.

The choice of MeTRH as the study site was deliberate due to its significance as the primary healthcare provider for a substantial population and its status as the county's referral hospital. With its extensive patient volume and central role in the healthcare infrastructure of Meru County, MeTRH presents an ideal setting for examining the uptake of the National Health Insurance Fund (NHIF) among patients. Additionally, the hospital's official governance structure underscores its institutional importance and relevance to healthcare policy and decision-making processes.

The unit of analysis for the study comprised 6,205 patients who sought care at MeTRH, providing a representative sample of the hospital's patient population. The unit of observation specifically focused on adult patients with NHIF coverage, allowing for a targeted investigation into the factors influencing health insurance enrollment among individuals accessing care at MeTRH. By examining this subset of patients, the study aimed to shed light on the determinants of NHIF uptake within the context of a busy referral hospital serving a diverse patient demographic.

3.5 Selection of Study Participants

The sample size was determined using Yamane (1967) model, and the study sought to use a sample size of 376 respondents. According to Yamane (1967) Model:

$$n = \frac{N}{1+N(e^2)} = 6205 / 1+6205\ (0.05^2) = 376$$

Where: n = the desired sample size

e = margin of error; the probability of error (i.e., the desired precision, in this case, 0.05 for 95 percent confidence level)

N = the total population size

=376 respondents

3.6 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria were established to ensure that the study focused on relevant participants who met specific eligibility criteria. Adult patients attending Meru Teaching and Referral Hospital (MeTRH) during the months of May and July 2023 were included in the study. This timeframe was chosen to capture a representative sample of patients seeking care at the hospital. Additionally, the inclusion of adult patients ensured that the study targeted individuals capable of providing informed consent and actively engaging in the survey process.

Furthermore, the inclusion criterion specified that participants must have National Health Insurance Fund (NHIF) coverage. This criterion was essential as the study aimed to investigate the uptake of NHIF among patients accessing care at MeTRH. By focusing on patients with NHIF coverage, the study could explore the factors influencing health insurance enrollment and utilization within the study population.

The exclusion criteria for the study were minimal to maximize the inclusivity of the sample. Patients who did not meet the inclusion criteria, such as those without NHIF coverage or

individuals below the age of 18, were excluded from the study. Additionally, patients who were unable or unwilling to provide consent for participation were excluded to ensure ethical research practices and protect the rights of participants.

3.7 Sampling

The sampling strategy employed in this study was systematic sampling. Initially, the total population size of adult patients accessing care at MeTRH during the study period was determined using hospital records or relevant administrative data sources. This provided the foundation for the subsequent sampling procedure. Following the determination of the population size, the sampling interval was calculated by dividing the total population size by the desired sample size. For instance, with a total population size of 6,205 patients and a desired sample size of 376, the sampling interval was approximately 16.5. To ensure practicality, the sampling interval was rounded down to the nearest whole number, resulting in a sampling interval of 16.

To initiate the sampling process, a random starting point within the first 16 patients was selected to introduce randomness and eliminate bias. This random starting point could be determined using methods such as a random number generator or by selecting a starting point at random from the initial 16 patients listed in the hospital records. Once the random starting point was established, every 16th patient from the list of patients seeking care at MeTRH was systematically selected to be included in the study sample. This systematic approach guaranteed that each patient had an equal opportunity of being selected while ensuring efficiency in the sampling process.

Throughout the data collection period, approximately 8 patients were sampled per day, with research assistants or data collectors responsible for identifying the sampled patients based on the predetermined systematic sampling interval. Subsequently, eligible patients were approached to verify their suitability for inclusion in the study, provided with information about the research objectives and procedures, and requested to participate in the study. Upon obtaining informed consent, relevant data pertaining to the study objectives were collected from the participants using structured questionnaires or other suitable data collection instruments.

By meticulously following this systematic sampling approach, the study aimed to procure a sample that accurately represented the broader population of adult patients seeking care at MeTRH, thereby facilitating the generalizability of the study findings.

The sample size determined is as shown:

=6205/376

=16.5

≈16

3.8 Data Collection

Structured questionnaires were employed to get primary data. The questionnaires had close-ended questions. The close-ended were easier to analyze as they had questions with limited choices that the respondents selected. Mohajan (2018) points out that the close ended questions are easier to analyze. Questionnaires were preferred since they conserved resources and time and they were also easier to analyze since they were in immediate usable means and, they were the preferred instruments for collecting data in survey studies.

A letter of introduction from Strathmore Business School was presented to the respondents to gain permission to ask questions from the participants. The researcher also obtained a permit from NACOSTI to be allowed to collect the necessary data from the respondents. The researcher administered the questionnaires to the target respondents with the help of research assistants. An appointment was booked by the researcher with MeTRH two days before dropping the questionnaires. The questionnaires were administered through the drop and pick-later strategy and substituted with Google docs where necessary to maximize the response rate. The researcher then distributed the surveys to the sampled respondents, working with them to ensure that they had adequate time to complete them. This made it possible to establish a friendly environment for the distribution and administration of the questionnaire. The questionnaire was distributed in accordance with the agreed-upon timetable. In improving the rate of response, the ethical issues were put into consideration in this study. The researcher explained to the respondents the study

significance. The respondents were assured by the researcher of the confidentiality and identity anonymity.

3.9 Research Quality

Pilot testing was done to help assess the feasibility of research methods and instruments before proceeding to the full-scale investigation. By testing the study's procedures on a small sample, the researcher identified and addressed potential logistical challenges, refine data collection methods, and validate research instruments. Thirty-seven respondents who would not participate in the main study were randomly chosen from the target audience. The pilot study's results were to evaluate the research instruments' relevance, clarity, and comprehensibility.

3.9.1 Validity of the Research Instrument

Snyder (2019) points out that the correctness and importance of the conclusions derived from the results of the investigation should be valid. One of the main reasons for conducting the pilot study was the validity of the questionnaire. The study relied on validity of content, which comprised extrapolating test findings to a wide range of objects identical to those in the test. The sample population's representativeness was a matter of content validity. The knowledge and skills of test items should be reflective of the broader field of information and competence, according to Ghauri, Grønhaug and Strange (2020). Expert assistance on the representation and relevance of the issues and ideas on the organization of research instruments were sought. This helped to improve the validity of the collected information. The content validity of the questionnaire was determined by requesting comments from the supervisors and other professionals on its appropriateness.

3.9.2 Reliability of the Research Instrument

On the other side, instrument reliability refers to the consistent generation of identical data by a research instrument under similar conditions. This is the extent to which it measures everything to be measured consistently (Plomp, 2018). Reliability addressed the question of whether the results of a study were reproducible. Thirty-seven questionnaires were provided to a pilot group of randomly chosen respondents from the target audience and their response was used to test the reliability of the tool. This represented 10% of the sample's overall size. For this study, all constructs had a construct composite reliability coefficient (Cronbach alpha) of 0.7 or higher

(Cronbach alpha) of 0.7 or above for all constructs was considered appropriate (Gorard, 2018). Cronbach's alpha (α) was used to determine the research instrument's reliability coefficient.

3.10 Data Analysis

Data that was collected from the field was filtered, sorted and cleaned in line with research objectives. The data was coded, and entered into and analyzed using statistics software (SPSS, Version 27.0). This study adopted both descriptive and inferential statistics. Descriptive statistics including frequencies, percentages, mean scores, and standard deviation was produced for all the quantitative data. The results were presented using tables. Diagnostic tests formed part of this research to ensure there is the suitability of data for primary assumptions of multiple linear regression. The research adopted normality test, heteroscedasticity test, autocorrelation test, and the test for multicollinearity.

Inferential statistics was done using the multiple linear regression which showed the significance of each independent variable. Multiple linear regression is a statistical technique for quantifying the relationship between the independent variables and the dependent variable based on observations. The regression model that was applied in this study as shown

$Y= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ ……Equation 3.1

Where; Y was the uptake of National Health Insurance Fund among patients,

β_0, was the constant or coefficient of intercept

β_1, β_2, β_3 and β_4 were the coefficients of independent variables

X_1 was accessibility

X_2 was awareness

X_3 was organization capacity

X_4 was availability of finances

ε was Error term

3.11 Ethical Considerations

The participants in the study were debriefed on the purpose of the study and were made to understand that participation was purely voluntarily. Respondents were informed on the sensitivity of some of the questions that were asked, and that the information given was treated with confidentiality and they remained anonymous. The participants were asked to give an informed consent for their voluntary participation. Permission from Strathmore University (SU) ethical committee and a permit from National Council of Science, Technology, and Innovation (NACOSTI) were sought. This was done after getting an introduction letter from the Institute of Healthcare Management at Strathmore University.

3.12 Chapter Summary

This chapter outlined the philosophical underpinnings of the research and outlined the specific methodological choices that were used. The next chapter comprised of the data analysis and interpretation.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter began by considering the return rate of questionnaires administered by the researcher and follows on to look at the responses by those respondents who were subjected to interview using a written schedule. The background information of the respondents is also discussed in detail. Data that was collected was analyzed, presented, and interpreted as guided by the research questions.

4.2 Response Rate

The researcher aimed to gather responses from 376 participants through administering questionnaires. However, data was acquired from 279 individuals, giving a response rate of 74.2%. According to Mohajan (2018), a response rate of 50 percent or more is acceptable for analyses.

Table 4. 1: Response Rate

Response	Frequency	Percentage
Response	279	74.2
No response	97	25.8
Total	**376**	**100.0**

4.3 Reliability Analysis

In this study, the reliability of constructs was assessed by employing Cronbach's alpha coefficients, which gauge the internal consistency of items within a scale. The reliability was deemed satisfactory as indicated by the results, where the Cronbach's alpha (α) coefficient associated with the study variables exceeded the recommended threshold of 0.70, as suggested by Gorard (2018). According to Gorard, a minimum alpha (α) value of 0.70 is necessary for satisfactory measurement intervals. The outcomes of the reliability analysis are presented in Table 4.2.

Table 4. 2: Reliability of Measurement Scales

	Cronbach's alpha	Decision
Accessibility	.818	Reliable
Awareness	.772	Reliable

Organization capacity	.802	Reliable
Availability of finances	.862	Reliable
Uptake of National Health Insurance Fund	.912	Reliable

From the findings, uptake of National Health Insurance Fund (Cronbach's alpha=0.912) was the most reliable, followed by availability of finances (Cronbach's alpha=0.862), then accessibility (Cronbach's alpha=0.818), then organization capacity (Cronbach's alpha=0.802) while the awareness (Cronbach's alpha =0.772) was the least.

4.4 Background Information

In this study, data was gathered from various respondent groups categorized by gender, age brackets, and their highest levels of education. The results were then presented in the following subsections.

4.4.1 Gender of the Respondent

The researcher collected data based on the respondents' gender by asking them to indicate their gender. This data was then summarized and presented in Table 4.3.

Table 4. 3: Gender of the Respondents

	Frequency	Percent
Male	149	53.4
Female	130	46.6
Total	**279**	**100.0**

s indicated by the outcomes displayed in Table 4.3, 53.4% of the participants were identified as male, whereas the remaining 46.6% were classified as female. This suggests that the study did not have gender bias, as the researcher gathered dependable information without regard to the respondents' gender.

4.4.2 Respondents' Highest Level of Education

The researcher enquired on the respondents' highest level of education. The findings were presented in Table 4.4.

Table 4. 4: Respondents' Highest Level of Education

	Frequency	Percent
Certificate	44	15.8
Diploma	127	45.5
Undergraduate	95	34.1
Masters	11	3.9
Doctorate	2	0.7
Total	**279**	**100.0**

The results indicated that 45.5% of the participants had attained a Diploma level of education, 34.1% had successfully obtained an Undergraduate degree, 15.8% carried a Certificate level of education, 3.9% had finished a Master's program, and 0.7% held a Doctorate degree. These findings demonstrate that all study participants possessed an adequate educational background to understand the subject matter and offer reliable information for the study.

4.4.3 Respondents' Age Bracket

The respondents were asked to indicate the age bracket that they belong to. Table 4.5 shows the findings.

Table 4. 5: Respondents' Age Bracket

	Frequency	Percent
21-30 years	31	11.1
31-40 years	108	38.7
41-50 years	87	31.2

above 51 years	53	19.0
Total	**279**	**100.0**

The study found that 38.7% of the respondents were aged between 31-40 years, 31.2% were aged between 41-50 years, 19.0% were aged above 51 years, while 11.1% were aged between 21-30 years. This implies that all study respondents were mature enough to effectively collaborate and provide dependable insights on the subject being studied.

4.5 Accessibility

The research aimed to establish how accessibility influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The respondents were required to indicate their level of agreement with statements on accessibility and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Table 4.6 presented the results.

Table 4. 6: Influence of Accessibility on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral

	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
	F	**F**	**F**	**F**	**F**		
	%	**%**	**%**	**%**	**%**		
NHIF offices are easily accessible from my home	41	57	36	63	82	3.315	0.950
	14.7	20.4	12.9	22.6	29.4		
There are various means of contributing to NHIF apart from going to their offices	31	36	46	60	61	3.925	0.826
	11.1	12.9	16.5	21.5	21.9		

I use Meru Teaching and Referral Hospital because it is a NHIF Accredited Hospital	32 11.5	46 16.5	45 16.1	87 31.2	69 24.7	4.143	0.595
There is an option for daily payment to NHIF scheme	27 9.7	5 1.8	0 0.0	89 31.9	158 56.6	4.240	0.707
Composite Mean and Standard Deviation						**3.906**	**0.770**

As depicted in Table 4.6, the respondents concurred on several points: there exists an option for daily payment to the NHIF scheme, evidenced by a mean score of 4.240; they utilize Meru Teaching and Referral Hospital due to its NHIF Accredited status, indicated by a mean of 4.143; and various methods of contributing to NHIF are available beyond visiting their offices, as denoted by a mean of 3.925. These findings align with the perspective of Onwujekwe et al. (2019), who contended that in certain countries like the United Kingdom (UK), Spain, and Italy where the government plays a significant role in healthcare service commissioning or delivery access is determined largely by residency rights rather than insurance purchase.

Furthermore, the participants exhibited a neutral stance regarding the accessibility of NHIF offices from their homes, as evidenced by a mean score of 3.315. These findings contrast with the perspective presented by Sisko et al. (2019), who asserted that the adoption of voluntary medical health insurance among 70% of the impoverished population is typically low. Additionally, the task of collecting premiums from individuals belonging to the poorer segment of society, predominantly residing in rural areas and primarily engaged in the informal agricultural sector, poses considerable challenges.

Overall, the variable had a composite mean of 3.906, indicating that accessibility plays a role in influencing the adoption of the National Health Insurance Fund cover among patients at Meru Teaching and Referral Hospital, Kenya. Furthermore, the variable demonstrated a composite

standard deviation of 0.770. This suggests that statements with standard deviations lower than the composite standard deviation reflect converging opinions, while those with higher standard deviations imply differing viewpoints among respondents.

According to Mwaura et al. (2021), individuals with lower incomes are disproportionately affected, being required to allocate more of their financial resources for contributions to the National Health Insurance Fund pool. The reception of incremental changes in NHIF premiums by low-income earners including those engaged in the informal "*jua kali*" sector remained to be established. This highlights the timeliness and critical necessity of this study, especially at a time when significant changes to NHIF are being made and others contemplated as the country makes steps to actualize UHC.

4.6 Awareness

The study aimed to investigate the impact of awareness on the adoption of the National Health Insurance Fund among patients at Meru Teaching and Referral Hospital in Kenya. Respondents were asked to express their agreement level concerning statements about awareness and the adoption of the National Health Insurance Fund at the hospital. The outcomes of this investigation are presented in Table 4.7.

Table 4. 7: Influence of Awareness on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral

	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
	F	**F**	**F**	**F**	**F**		
	%	**%**	**%**	**%**	**%**		
There are often community outreaches to sensitize citizens on NHIF benefits	26	31	25	102	95	3.749	0.787
	9.3	11.1	9.0	36.6	34.1		

The facility has informative posters displayed for patients within the facility on NHIF services	14 5.0	0 0.0	2 .7	112 40.1	151 54.1	4.384	0.925
Awareness provides knowledge and life skills that allow better-educated persons to gain more ready access to information and resources to promote health	26 9.3	19 6.8	27 9.7	93 33.3	114 40.9	3.896	0.769
I am aware of the requirements of the service providers to implement the scheme	45 16.1	59 21.1	63 22.6	112 40.1	0 0.0	2.867	0.616
There is mechanism by NHIF for health providers and clients to give their feedback.	47 16.8	50 17.9	56 20.1	100 35.8	26 9.3	3.029	0.761
Composite Mean and Standard Deviation						**3.585**	**0.772**

The results indicated that respondents were in agreement regarding several aspects: the presence of informative posters within the facility illustrating NHIF services, with an average score of 4.384; the positive influence of awareness on individuals seeking greater access to health-related information and resources, with an average score of 3.896; and the occurrence of community outreach efforts to educate citizens about NHIF benefits, with an average score of 3.749.

Al-Hanawi, Vaidya, Alsharqi, and1 Onwujekwe (2018) suggested that individuals with low income and limited education, who are living paycheck to paycheck, might struggle to comprehend the reasons behind contributing their limited funds for potential future events. This highlights the need for targeted information, education, and communication to enhance awareness of health insurance coverage options.

To counteract unfavorable anti-insurance sentiment, intentional communication efforts should be made emphasizing key concepts like unity, motivation, trust, and social security. This includes educating individuals especially those in the low-income bracket about their vulnerability and the potential for unfavorable if risks remain unmitigated by protective measures. Simple and low-tech strategies, such as visual materials such as posters, video, films and roadshows can be employed to disseminate information regarding health coverage. Through these social presentation methods, prospective clients can be guided towards recognizing the substantial costs associated with health emergencies and the role of insurance in mitigating those risks (Fleischmann-Struzek et al., 2018).

Furthermore, the respondents expressed neutrality regarding the existence of a mechanism by NHIF for health providers and clients to provide feedback, with an average score of 3.029. Additionally, they indicated awareness of the requirements that service providers need to fulfil to implement the scheme, with an average score of 2.867.

Kamano et al. (2022) argue that given the notable advancements in data and communication technology that have occurred over the past twelve years, evident through the growth of social media platforms and traditional media outlets, it is widely anticipated that these advancements had an impact on raising awareness about health insurance, particularly among workers in the informal sector, such as those in the *bodaboda* industry.

The composite mean was calculated to be 3.585, indicating that awareness plays a role in influencing the adoption of the National Health Insurance Fund among patients at Meru Teaching and Referral Hospital in Kenya. Additionally, the variable exhibited a composite standard deviation of 0.772. This suggests that statements with standard deviations lower than the composite standard deviation signify a convergence of opinions, while those with higher standard deviations indicate varying viewpoints among respondents.

In the study by Mwaura et al. (2021), an examination was conducted on the factors impacting the uptake of health insurance, with a focus on NHIF enrolment. Within the study, interviews were conducted with individuals belonging to taxi associations, farmers, and self-help groups from different regions of the country. The lack of awareness regarding enrolment strategies and essential coverage standards emerged as a significant obstacle to enrolment.

4.7 Organization Capacity

The study aimed to assess how organization capacity influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The researcher required the respondents to state their level of agreement with statements related to organization capacity and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. The results are displayed on Table 4.8.

Table 4. 8: Influence of Organization Capacity on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
	F	**F**	**F**	**F**	**F**		
	%	**%**	**%**	**%**	**%**		
The physical location of the facility is ideal	43	44	58	101	33	3.133	0.764
	15.4	15.8	20.8	36.2	11.8		

The health facility has a functioning health management information system	36 12.9	23 8.2	27 9.7	74 26.5	119 42.7	3.778	0.904
The health facility has always adequate patients' examination equipment	22 7.9	19 6.8	17 6.1	92 33.0	129 46.2	4.029	0.729
The health facility has mostly sufficient laboratory facilities	30 10.8	26 9.3	16 5.7	98 35.1	109 39.1	3.824	0.828
The facility has always adequate number of health providers	39 14.0	39 14.0	45 16.1	67 24.0	89 31.9	3.459	0.918
Composite Mean and Standard Deviation						**3.645**	**0.829**

As shown in Table 4.8, the respondents demonstrated agreement on several points: the health facility consistently possesses sufficient patients' examination equipment, with a mean score of 4.029; the health facility generally maintains satisfactory laboratory facilities, indicated by a mean score of 3.824; and the health facility operates a functional health management information system, with a mean score of 3.778.

These findings align with the viewpoint presented by the World Health Organization (2017), which asserts that the quality of health care services is influenced by the structural facilities and their distinct characteristics. One perspective in the accreditation of health facilities involves assessing the facility's structural adequacy, as well as factors such as staffing levels, technology

and equipment availability, and supporting services like laboratory, pharmacy, and radiology. These structural attributes, coupled with other complementary resources in healthcare facilities and institutions, serve as the foundational elements upon which high-quality health care services are delivered and which contribute to the increased utilization of health services.

The respondents expressed neutrality regarding whether the health facility consistently maintains an adequate number of health providers, as indicated by a mean score of 3.459. Similarly, they were neutral about whether the physical location of the facility is optimal, with a mean score of 3.133. Munge, Mulupi, Barasa, and Chuma (2018) provide a comprehensive perspective of the healthcare structure, encompassing structural elements such as hospitals, health centres, dispensaries, and clinics, along with human resources including doctors, nurses, clinicians, and paramedical staff, among others. These components, along with other resources, collectively contribute to the capacity to deliver health services.

A composite mean of 3.645 suggests that there is an apparent impact of organization capacity on the adoption of the National Health Insurance Fund (NHIF) among patients at Meru Teaching and Referral Hospital in Kenya. The variable also had a composite standard deviation of 0.829 implying that statements that had standard deviations that were lower than the composite standard deviation had converging opinions while those whose standard deviations were higher implied that the respondents' opinions differed.

Wagura (2019) study concluded that differences in health facility organization capacity levels were not significantly linked to the utilization of the NHIF primary care scheme, implying independence between the two factors.

4.8 Availability of Finances

The study sought to determine the influence of availability of finances on the uptake of National Health Insurance Funds among patients at Meru Teaching and Referral Hospital in Kenya. Respondents were asked to express their level of agreement with statements related to the availability of finances and the utilization of the NHIF among patients in the hospital. The findings are presented in Table 4.9.

Table 4. 9: Influence of Availability of Finances on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral

	SD F %	D F %	N F %	A F %	SA F %	Mean	Std. Dev.
National Health Insurance Fund is affordable in terms of monthly subscriptions	29 10.4	21 7.5	21 7.5	90 32.3	118 42.3	3.885	0.814
The amount of revenue per month I get influences my uptake of NHIF scheme	0 0.0	0 0.0	0 0.0	104 37.3	175 62.7	4.627	0.984
My employment status does not allow me to subscribe to NHIF scheme	23 8.2	19 6.8	27 9.7	94 33.7	116 41.6	3.936	0.736
Composite Mean and Standard Deviation						**4.149**	**0.845**

The results revealed that the respondents strongly agreed that their monthly income level influences their uptake of NHIF scheme as shown by a mean of 4.627. In a different study examining the willingness to pay for Community-Based Health Insurance (CBHI) among employees in the informal sector in urban Bangladesh, key factors influencing willingness to pay

were found to include monthly income, educational level, occupation, and geographical location (Asante, 2022).

The respondents also agree that their employment status does not allow them to subscribe to NHIF scheme as shown by a mean of 3.936, and the National Health Insurance Fund is affordable in terms of monthly subscriptions as shown by a mean of 3.885. The different ways through which people in the formal and informal sectors can raise funds such as participation in microfinance institutions such as savings and credit cooperative organizations (SACCOs) for those in the formal sector and community based savings groups called merry go rounds (informal sector) are, according to several studies important predictors of participation in health insurance (Onwujekwe et al., 2019).

The composite mean was 4.149 implying that availability of finances influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The variable also had a composite standard deviation of 0.845 implying that statements that had standard deviations that were lower than the composite standard deviation had converging opinions while those whose standard deviations were higher implied that the respondents' opinions differed. Enrolment in a health insurance scheme was affected by the availability of finances, for example, low level of income and financial literacy. Dependence on out-of-pocket payment for health care may lead poor households to avoid health expenditure and risk pooling mechanisms that have been recommended to lessen such costs for households such as in Bangladesh where approximately 88% of the population depends on work in the informal sector and were estimated to have low willingness to pay for community based health insurance (CBHI) especially among the three categories of urban informal workers i.e., rickshaw-pullers, shopkeepers and restaurant workers (WHO, 2018).

4.9 Uptake of NHIF among Patients

The respondents were asked to state their level of agreement with statements related to the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. The findings are as shown on Table 4.10.

Table 4. 10: Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

	SD F %	D F %	N F %	A F %	SA F %	Mean	Std. Dev.
It was easy to enroll for NHIF	30 10.8	23 8.2	25 9.0	97 34.8	104 37.3	3.796	0.813
I always use NHIF accredited referral hospitals	47 16.8	23 8.2	27 9.7	99 35.5	83 29.7	3.531	0.924
I am satisfied with NHIF services	0 0.0	0 0.0	0 0.0	94 33.7	185 66.3	4.663	0.974
I sometimes default on the monthly contributions required	26 9.3	23 8.2	19 6.8	81 29.0	130 46.6	3.953	0.806
Composite Mean and Standard Deviation						**3.986**	**0.879**

The findings revealed that the respondents strongly agreed that they are satisfied with NHIF services as shown by an average of 4.663. The respondents agreed that they sometimes default on the monthly contributions required as shown by an average of 3.953, it was easy to enroll for NHIF as shown by an average of 3.796, and they always use NHIF accredited referral hospitals as shown by an average of 3.531. According to Akokuwebe and Idemudia (2022), it's a fact that health is a

fundamental human right with PHC considered to be of great importance in guiding health policy towards the attainment of universal and equitable access to health care.

The composite mean was 3.986 implying that the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital had improved. The variable had a composite standard deviation of 0.879 implying that statements that had standard deviations lower than the composite standard deviation had converging opinions while those whose standard deviations were higher implied that the respondents' opinions differed. Kullberg et al. (2019) averred that proper implementation of PHC entailed the offer of basic health care services that are accessible, person-focused, comprehensive, and universal. This is achieved by introduction and development of prepayment of financial contributions for the healthcare financing methods with a view of sharing risk among the population and avoiding catastrophic healthcare expenditure and impoverishment of individuals as a result of seeking care.

4.10 Basic Tests for Statistical Assumptions

Under this section diagnostic tests for testing the regression assumptions are presented. These tests include normality, heteroscedasticity, autocorrelation, multicollinearity and sampling adequacy. Before a complete regression analysis can be performed, the assumptions concerning the original data must be made (Sevier, 1957). Ignoring the regression assumptions may contribute to wrong validity estimates (Ishak & Ahmad, 2018). When the assumptions are not met, the results may result in Type I or Type II errors, or over- or under-estimation of significance of the effect size (Nimon, 2012).

4.10.1 Normality Test

The testing for normality in this study was conducted using Kolmogorov Smirnov test and Shapiro Wilk test. Thus, Table 4.11 illustrates the results of two normality tests, the Kolmogorov-Smirnov test and the Shapiro-Wilk test.

Table 4. 11: Checking for Normality

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Accessibility	0.183	278	0.021	0.907	278	0.610
Awareness	0.171	278	0.016	0.902	278	0.530

Organization capacity	0.172	278	0.009	0.812	278	0.080
Availability of financial resources	0.138	278	0.011	0.917	278	0.262
Uptake of National Health Insurance Fund	0.139	278	0.017	0.872	278	0.439

In both cases, the p-value exceeded 0.05, leading to the rejection of the null hypothesis (H_0). Consequently, it was concluded that data related to both the dependent and independent factors exhibited a normal distribution, which enhances their predictability in relation to the dependent variables (Ahmad & Khan, 2015). This is as prescribed by Demir (2022) that if the Sig. value of the Shapiro-Wilk Test is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution.

4.10.2 Heteroscedasticity

This test checks whether the variance of the dependent variable varies across the data (test the assumption of equal variance). To test for heteroscedasticity, the Levene test was used where if P-value< 0.05 is an indication of presence of non-uniform variance. The test results were as shown in Table 4.12.

Table 4. 12: Levene Test Results

Variables	Levene Statistic	Df1	Df2	Sig.
Accessibility	0.183	1	278	0.021
Awareness	2.171	1	278	0.014
Organization capacity	3.172	1	278	0.031
Availability of financial resources	4.238	1	278	0.003
Uptake of National Health Insurance Fund	2.331	1	278	0.034

From the findings, the p-value for all the variables (accessibility, awareness, organization capacity, availability of financial resources and uptake of National Health Insurance Fund) were less than 0.05 hence the null hypotheses for equal variances was rejected. This further shows that the data set had no heteroscedasticity and is therefore suitable for modelling of regression equation

4.10.3 Autocorrelation Test

If the errors are correlated with one another, it would be stated that they are 'serially correlated'. A test of this assumption is therefore conducted. The first test was Durbin-Watson which is shown in the regression output of the model. The Autocorrelation Test results were presented in Table 4.13.

Table 4.13: **Autocorrelation Test**

Model	Durbin-Watson
1	2.067[a]

According to Akter (2014), the Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis that is always between 0 and 4. A value of 2.067 means that there is no autocorrelation in the sample. Values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation. The value of Durbin-Watson for the model as per the findings was 2.067. Thus, the null hypotheses were rejected for the model so there is no problem of autocorrelation.

4.10.4 Test for Multicollinearity

To establish whether multicollinearity levels would pose a challenge to the data analysis, collinearity diagnostics was conducted to generate the Variance Inflation Factor (VIF) value and tolerance levels. Multi-collinearity occurs when the independent variables are not independent from each other. Collinearity (also called multi-Collinearity) refers to the assumption that the independent variables are uncorrelated (Akinwande, Dikko & Samson, 2015). Multi-collinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is a near linear combination of other independent variables. The study utilized Collinearity Statistics to find out whether the independent variables are adequately correlated to show a substantial causal correlation. The results for multicollinearity test were presented in Table 4.14.

Table 4. 14: Collinearity Statistics

Variables	Collinearity Statistics	
	Tolerance	VIF
Accessibility	0.927	1.079
Awareness	0.466	2.146
Organization capacity	0.603	1.658
Availability of financial resources	0.638	1.567

Results in Table 4.14 show that, based on the coefficients output, accessibility had a VIF value of 1.079, awareness had a VIF value of 2.146, organization capacity had a VIF value of 1.658, and organization capacity had a VIF value of 1.567. The VIF values for all the variables were less than 10 and a tolerance greater than 0.1 implying that there was no Multicollinearity symptoms as indicated by Thompson et al. (2017).

4.11 Regression Analysis

The study used a regression model to test the hypothesis between accessibility, awareness, organization capacity, availability of finances, and uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The results are as shown on Table 4.15, 4.16 and 4.17.

Table 4. 15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.890	0.792	0.789	1.052

The outcome of Table 4.15 found that R-Square value (coefficient of determination) is 0.792, which indicates that the independent variables (accessibility, awareness, organization capacity, and availability of finances) explain 79.2% of the variation in the dependent variable (uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya) leaving 20.8% percent unexplained. This implies that there are other factors that influence uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya that were not covered in this study.

Table 4. 16: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1168.88	4	292.220	261.379	3.27E-92
	Residual	306.33	274	1.118		
	Total	**1475.21**	**278**			

The results shown in Table 4.16 revealed that the model had predictive value and thus it was significant. This was because its p-value was less than 5%, p=.000 and F-calculated (261.379) was significantly larger than the critical F-value (2.4046).

Model coefficients provide unstandardized and standardized coefficients to explain the direction of the regression model and to establish the level of significance of the study variables. The results are captured in Table 4.17.

Table 4. 17: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.053	0.117		9.000	0.000
Accessibility	0.782	0.249	0.759	3.141	0.002
Awareness	0.701	0.311	0.680	2.254	0.025
Organization capacity	0.599	0.206	0.581	2.908	0.004
Availability of finances	0.813	0.091	0.789	8.934	0.000

As per the SPSS generated table above, the equation ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$) becomes:

$Y= 1.053 + 0.782X_1+ 0.701X_2+ 0.599X_3+ 0.813X_4$

The findings showed that if all factors (accessibility, awareness, organization capacity and availability of finances) were held constant at zero, the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya will be 1.053. The findings presented also show that taking all other independent variables at zero, a unit increase in the accessibility would lead to a 0.782 increase in the scores of uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.

The findings also show that a unit increase in the scores of awareness would lead to a 0.701 increase in the scores of uptake of National Health Insurance Fund among patients in Meru

Teaching and Referral Hospital, Kenya. Further, the findings show that a unit increase in the scores of organization capacity would lead to a 0.599-increase in the scores of uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. The study also found that a unit increase in the scores of availability of finances would lead to a 0.813 increase in the scores of uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya.

Given these findings, at 95% confidence level, the study revealed that availability of finances had the greatest effect on the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, followed by accessibility, then awareness while organization capacity had the least effect to the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. All the variables were found to be significant as their p-values were less than 0.05.

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter five outlined the summary of this study, discussion of its findings and presented conclusions and recommendations as well as suggestion of areas which may require further consideration as far as future research is concerned.

5.2 Summary of the Findings

Chapter five outlined the summary of this study, discussion of its findings and presented conclusions and recommendations as well as suggestion of areas which may require further consideration as far as future research is concerned.

5.2.1 Influence of Accessibility on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

The findings of the study on the influence of accessibility on the uptake of the National Health Insurance Fund (NHIF) among patients at Meru Teaching and Referral Hospital (MeTRH) align closely with the research conducted by Mutai (2021) regarding the impact of accessibility factors on social health insurance uptake among Bodaboda operators. Both studies emphasize the significance of accessible payment options in promoting health insurance uptake, particularly within informal sectors.

While the current study emphasizes the importance of payment options over physical proximity to NHIF offices, Yusuf et al. (2019) argue that geographical accessibility to healthcare facilities plays a significant role in insurance enrollment. This contrast suggests a divergence in the factors driving insurance uptake, with the MeTRH study indicating that proximity to NHIF offices may not be a primary consideration for potential enrollees.

The finding on flexible payment options partially aligns with Onwujekwe's et al. (2019) emphasis on digital accessibility. While the current study did not specifically investigate digital enrollment platforms, its recognition of the importance of accommodating diverse payment preferences resonates with Onwujekwe's et al. (2019) argument regarding the role of technology in improving insurance accessibility. However, the MeTRH study's findings may suggest that

physical accessibility, rather than digital accessibility, is a more influential factor in the context studied.

The current study did not directly address cultural or social factors influencing insurance uptake, unlike Dang, Dang and Vallish (2021). Therefore, it is challenging to directly compare their findings in this regard. However, both studies underscore the complexity of factors shaping insurance enrollment decisions, suggesting that socio-cultural considerations may interact with accessibility factors to influence uptake patterns. Further research could explore the interplay between payment options and socio-cultural norms to provide a more comprehensive understanding of insurance uptake dynamics.

5.2.2 Influence of Awareness on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

The study findings align with Al-Hanawi et al.'s (2018) suggestion that individuals with low income and limited education may struggle to comprehend the reasons behind contributing to health insurance. Both studies emphasize the importance of targeted information, education, and communication strategies to enhance awareness and understanding of health insurance coverage options, particularly among socioeconomically disadvantaged populations. This agreement underscores the need for tailored communication approaches to address the diverse needs and challenges faced by different demographic groups.

The study's emphasis on the pivotal role of awareness in NHIF uptake resonates with the findings of Barasa et al. (2018) and Fadlallah et al. (2018). Similar to these studies, the MeTRH research highlights the challenges associated with disseminating health insurance information, especially in rural and informal sector settings. This consistency underscores the persistent barrier of low awareness in hindering health insurance uptake, particularly in contexts where insurance concepts are relatively new. It reinforces the importance of effective communication strategies and community engagement to bridge the knowledge gap and promote understanding of health insurance benefits.

Fleischmann-Struzek et al. (2018) had contrasting perspectives arguing that regions with more established health insurance systems or higher levels of health literacy may find that awareness is not as significant a barrier to uptake. However, in the context of current study and similar settings, where health insurance concepts may be less familiar and literacy levels vary, awareness emerges as a critical factor influencing enrollment decisions.

5.2.3 Influence of Organization Capacity on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

The study's focus on organizational capacity as a determinant of NHIF uptake aligns with the broader literature emphasizing the importance of healthcare facilities' structural features and resources, as highlighted by the World Health Organization (WHO) (2017). The findings were in agreement with WHO (2017) who underscore the significance of facilities possessing adequate patient examination equipment, laboratory facilities, and a functioning health management information system. These resources are not only essential for delivering quality healthcare but also influence patients' decisions to seek care at a particular facility and their subsequent uptake of NHIF.

While the study's findings support the notion that patients consider a hospital's organizational capacity when deciding to seek care and enroll in NHIF, the observation that variations in health facility organization capacity were independent of NHIF uptake deviates from the expected positive correlation. This inconsistency from Munge, Mulupi, Barasa and Chuma (2018) prompts a closer examination of the nuances within organizational capacity. It suggests that while structural features are vital, other factors such as service quality and patient satisfaction may influence NHIF uptake independently of structural capacity. This finding challenges the simplistic assumption that organizational capacity alone directly drives NHIF enrollment.

Fiestas Navarrete et al. (2019) emphasize the importance of healthcare service quality, staff competence, and responsiveness in shaping patients' perceptions and decisions regarding insurance enrollment. The study suggested that while structural features are necessary, they may

not be sufficient to drive health insurance uptake if service quality and patient experience are lacking.

5.2.4 Influence of Availability of Finances on Uptake of National Health Insurance Fund among Patients in Meru Teaching and Referral Hospital

The study found that individual income or revenue per month strongly influences patient uptake of the NHIF scheme. This observation is consistent with broader studies emphasizing income as a significant determinant of health insurance participation, as highlighted by Yusuf et al. (2019) and Kreutzburg et al. (2020). These studies reinforce the understanding that individuals with higher incomes are more likely to afford health insurance premiums and, therefore, are more inclined to enroll in insurance schemes like NHIF.

Despite income being a significant determinant, the study also brings attention to the challenges faced by low-income earners, particularly with the introduction of new premium rates. While perceptions about employment status and affordability of monthly NHIF premiums were not deemed as strong influencers at MeTRH, the study underscores the specific challenges faced by low-income earners in accessing health insurance. This finding resonates with Asante (2022) about the affordability of health insurance for socio-economically disadvantaged groups.

The consistency in emphasizing the role of income in health insurance uptake highlights the importance of addressing affordability concerns in health insurance policies. While higher-income individuals may find it easier to afford premiums, policymakers need to ensure that insurance remains accessible and equitable for all socio-economic groups. This might involve subsidy programs or premium structures that take into account the financial constraints of low-income earners, as suggested by other authors like Martinussen and Magnussen (2019) in their discussions on health insurance equity.

5.3 Conclusions

The study concluded that accessibility significantly influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. It was evident that increasing access to NHIF-accredited facilities and offering multiple premium payment options without the need for physical visits to NHIF offices can enhance NHIF uptake. These findings underscore the critical role of accessibility in ensuring equitable access to healthcare services. Therefore, policymakers should prioritize measures to improve accessibility to NHIF services, such as expanding the network of accredited facilities and implementing user-friendly payment systems, to promote greater enrollment and participation in the NHIF scheme.

The study concluded that awareness significantly influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. The research deduced that increased awareness of NHIF services and benefits was found to be directly associated with higher uptake among patients. This emphasizes the need for targeted health education campaigns and community outreach programs to enhance awareness of health insurance options, particularly among underserved populations. By empowering individuals with knowledge about NHIF, they can make informed decisions regarding their healthcare financing, ultimately leading to better health outcomes and financial protection.

The study concluded that organization capacity significantly influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. The research concluded that patients are more inclined to take up NHIF coverage at hospitals perceived to have adequate organizational capacity, including infrastructure, ICT equipment, and other essential supplies. Therefore, investments in strengthening health system capacity, particularly in NHIF-accredited facilities, are essential for enhancing patient confidence and trust in the healthcare system. Furthermore, accreditation of hospitals by NHIF can serve as a quality assurance mechanism, further incentivizing patient uptake of NHIF coverage.

The study concluded that availability of finances significantly influences the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Patients who perceive themselves as financially capable are more likely to enroll in health cover. This highlights the importance of ensuring affordability and financial protection in health insurance schemes. Policymakers should explore strategies to make health insurance premiums more

affordable, particularly for low-income earners, through subsidies or income-based premium structures. Additionally, efforts to improve financial literacy and promote savings mechanisms can further enhance individuals' ability to afford health insurance coverage.

5.4 Recommendations

The procedures and systems for enrolling patients into the NHIF should be simplified and hastened to encourage utilization. The Meru Teaching and Referral Hospital along with NHIF management should take the initiative of organizing programs/campaigns to sensitize informal sector workers on the health benefits of being a member enrolled with NHIF. The management of the NHIF scheme should embark on a campaign of knowledge dissemination and education of all potential consumers of their services.

NHIF should work out mechanisms with county governments to streamline the flow of capitation/reimbursement funds, including independence of health facilities to manage their own funds and improve their infrastructure and service offerings to attract new clients.

5.5 Suggestions for further research

This research covered the determinants of the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya. In consideration of the findings, the study recommends the same study to be done in hospitals in other counties for generalization of findings. Other research should consider other factors that influence uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital, Kenya that were not covered in this

5.6 Limitations of the research

The respondents that were targeted in this study were reluctant in giving information fearing that the information being sought might be used against them or paint a negative image about them. Prior to data collection, the researcher implemented a stringent informed consent protocol. Respondents were provided with detailed information about the purpose of the study, the confidentiality measures in place, and their rights as participants. They were required to provide explicit consent before participating, ensuring that they felt comfortable and informed throughout

the process. The researcher also handled this by carrying an introduction letter from the University to assure them that the information they gave would be treated with confidentially and would be used purely for academic purposes. To further reassure respondents, the researcher guaranteed anonymity and confidentiality. Data collected were coded and stored securely, with access restricted to authorized personnel only. Respondents' identities were kept confidential, and any information provided was anonymized to prevent identification.

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APPENDICES

Appendix I: Introduction Letter

Dear (Respondent)

RE: PARTICIPATION IN DATA COLLECTION

I am a student pursuing a Masters' degree in Business Administration in Healthcare Management at Strathmore University and currently undertaking a research project on " **DETERMINANTS OF THE UPTAKE OF NATIONAL HEALTH INSURANCE FUND AMONG PATIENTS IN MERU TEACHING AND REFERRAL HOSPITAL, KENYA".** Kindly respond to the questions in the attached questionnaire. The information provided will exclusively and solely be used for academic purposes and will be treated with utmost confidentiality. Upon request, you will be furnished with a copy of the final report.

Your cooperation will be highly appreciated.

Yours Faithfully,

SYMON WAMBUGU MWANGI

Appendix II: Participant Info Sheet and Consent Form

I have listened to and/or read information presented by the researcher **Symon Wambugu Mwangi** of the **Strathmore Business School at Strathmore University** and/or his designated research assistant about a study on *'Determinants of the Uptake of National Health Insurance Fund Among Patients in Meru Teaching and Referral Hospital, Kenya'*. I am aware that the study intends to examine whether accessibility, awareness, organization capacity, and availability of finances influence the uptake of NHIF among patients in MeTRH.

I have been aware that I am 1 of the intended 376 random respondents to be interviewed in this study, that I can skip questions that I am uncomfortable answering, that there is no compensation for participating in this study and that adequate safeguards such as ensuring secure storage of completed questionnaires and coding of respondents, have been taken to protect the privacy and confidentiality of participants.

I have had the opportunity to ask any questions related to this study and receive satisfactory answers to my questions and any additional details I wanted.

I am aware that I can allow my interview to be tape-recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in the dissertation and publication to come from this research, with the understanding that the questions will be anonymous. I was informed that I can withdraw my consent without penalty by advising the researcher.

This study had been reviewed by and received ethics clearance through the Strathmore University Institutional Scientific and Ethical Review Committee (SU – ISERC) and the National Commission of Science Technology and Innovation (NACOSTI) in Kenya. I was informed that if I have any comments or concerns resulting from participating in this study, I may contact the researcher (wambugus ymail.com, 0720246326) or SU – ISERC (ethicsreview strathmore.edu, +254703034375)

With Full Knowledge of all preceding, I agree, of my own free will, to participate in this study.

☐ Yes ☐ No

I agree to have my interview tape-recorded.

☐ ☐

Yes No

I agree to the use of anonymous quotations in any thesis or publication that comes from this research.

Yes No

Subject's Name……..

Subject's signature…… Date…….

Researcher's signature…….. Date…….

Supervisors signature……. Date…….

Appendix III: Research Questionnaire

The purpose of this questionnaire is to collect data relating to the **DETERMINANTS OF THE UPTAKE OF NATIONAL HEALTH INSURANCE FUND AMONG PATIENTS IN MERU TEACHING AND REFERRAL HOSPITAL, KENYA**. You are hereby requested to complete this questionnaire. Note that any information given with respect to this request shall be treated with strict confidentiality and will only be used for the purpose of this research only.

SECTION A: BIODATA

1) Gender: Male [ ] Female [ ]
2) What is the highest level of education that you have completed as at now?

Primary School Certificate [ ] High School Certificate [ ] College Diploma [ ]
Undergraduate [ ] Masters [ ] Doctorate [ ]

3) What is your age bracket?

21-30 years [ ] 31-40 years [ ]

41-50 years [ ] 51 Years & above [ ]

SECTION B: DETERMINANTS OF THE UPTAKE OF NATIONAL HEALTH INSURANCE FUND AMONG PATIENTS IN MERU TEACHING AND REFERRAL HOSPITAL, KENYA

Accessibility

4) The statements here relate to accessibility and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Please indicate the extent to which you agree or disagree with each statement by circling one number on each line. 5=Strongly Agree (SA), 4=Agree (A), 3=Undecided (U), 2=Disagree (D) and 1=Strongly Disagree (SD).

Statements	1	2	3	4	5

NHIF offices are easily accessible from my home					
There are various means of contributing to NHIF apart from going to their offices					
I use Meru Teaching and Referral Hospital because it is a NHIF Accredited Hospital					
There is an option for daily payment to NHIF scheme					

Awareness

5) The statements here relate to awareness and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Please indicate the extent to which you agree or disagree with each statement by circling one number on each line. 5=Strongly Agree (SA), 4=Agree (A), 3=Undecided (U), 2=Disagree (D) and 1=Strongly Disagree (SD).

Statements	1	2	3	4	5
There are often community outreaches to sensitize citizens on NHIF benefits					
The facility has informative posters displayed for patients within the facility on NHIF services					
Awareness provides knowledge and life skills that allow better-educated persons to gain more ready access to information and resources to promote health					
I am aware of the requirements of the service providers to implement the scheme					

There is mechanism by NHIF for health providers and clients to give their feedback.					

Organization Capacity

6) The statements here relate to organization capacity and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Please indicate the extent to which you agree or disagree with each statement by circling one number on each line. 5=Strongly Agree (SA), 4=Agree (A), 3=Undecided (U), 2=Disagree (D) and 1=Strongly Disagree (SD).

Statements	1	2	3	4	5
The physical location of the facility is ideal					
The health facility has a functioning health management information system					
The health facility has always adequate patients' examination equipment					
The health facility has mostly sufficient laboratory facilities					
The facility has always adequate number of health providers					

Availability of finances

7) The statements here relate to availability of finances and the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Please indicate the extent to which you agree or disagree with each statement by circling one number on each line. 5=Strongly Agree (SA), 4=Agree (A), 3=Undecided (U), 2=Disagree (D) and 1=Strongly Disagree (SD).

Statements	1	2	3	4	5
National Health Insurance Fund is affordable in terms of monthly subscriptions					
The amount of revenue per month I get influences my uptake of NHIF scheme					
My employment status does not allow me to subscribe to NHIF scheme					

Uptake of NHIF among Patients

8) The statements here relate to the uptake of National Health Insurance Fund among patients in Meru Teaching and Referral Hospital. Please select the option that most closely reflects your viewpoint. 5=Strongly Agree (SA), 4=Agree (A), 3=Undecided (U), 2=Disagree (D) and 1=Strongly Disagree (SD).

Statements	1	2	3	4	5
It was easy to enroll for NHIF					
I always use NHIF accredited referral hospitals					
I am satisfied with NHIF services					
I sometimes default on the monthly contributions required					

Thank You

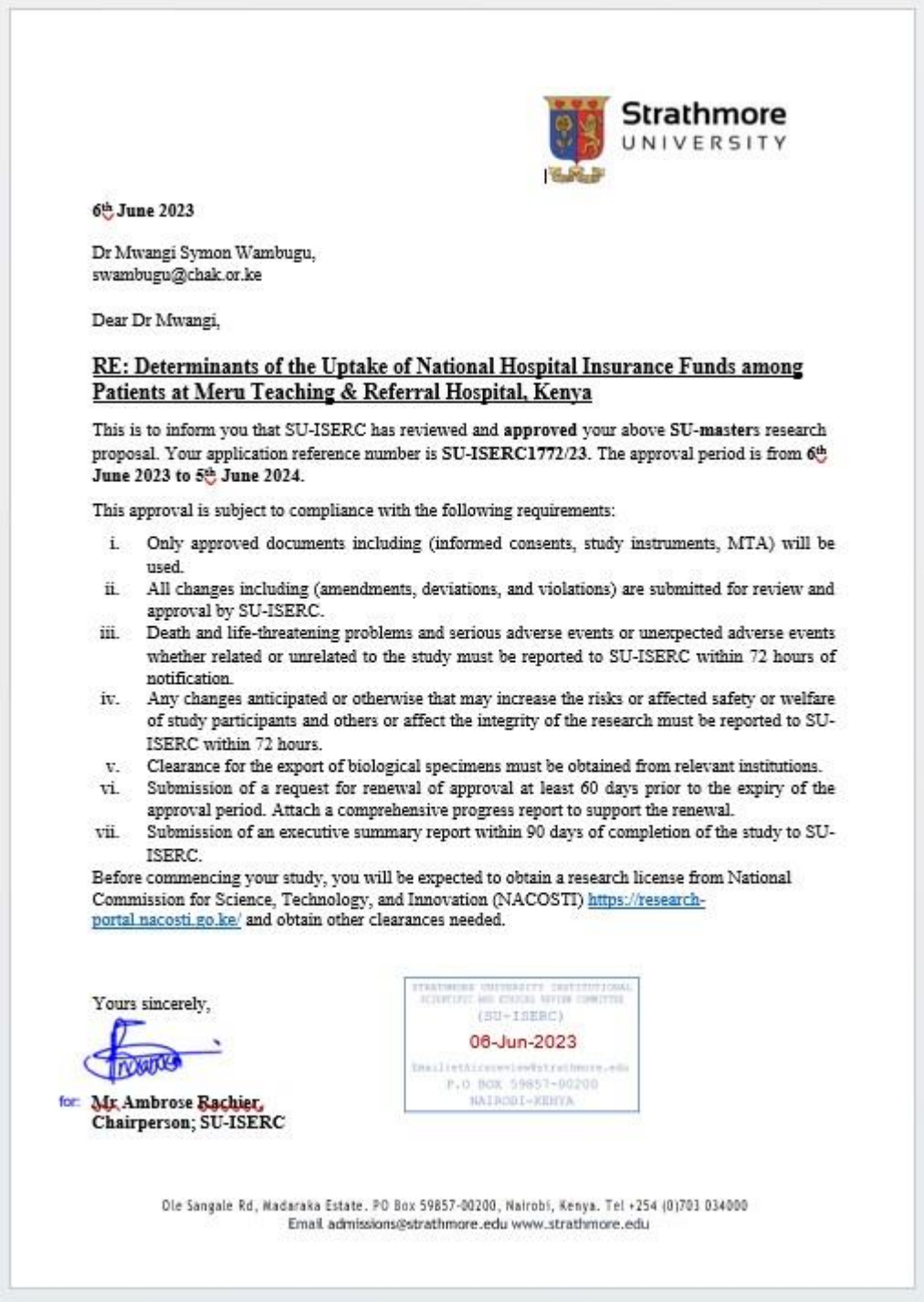
Appendix IV: Time Plan

	2023						
Task/Activity Details	Jan	Feb	Mar	Apr	May	Jun	Jul
Topic identification							
Proposal writing draft							
Presentation							
Pilot testing							
Data collection							
Data analysis and Report writing							
Project Presentation							
Project biding							

Appendix V: Approximate Budget

Item	Unit	Number of Units	Frequency	Cost Per Unit (KES)	Total Cost (KES)
Photocopy proposal document	copies	10	1	150	1500
Stationery & related items	assorted	1	1	2200	2200
Internet connectivity (3.75GB data bundle)	pax	4	1	750	3000
Research assistants transport reimbursement (pilot survey)	pax	4	1	500	2000
Research assistants stipend (study)	pax	4	7	750	21000
Research assistants transport reimbursement (study)	pax	4	7	500	14000
Lead researcher subsistence allowance	pax	1	7	750	5250
Dissertation preparation & printing (draft & final, est. 150 pages)	copies	10	1	1500	15000
Binding	copies	10	1	500	5000
Contingencies				5000	5000
Sub total					**73950**

Appendix VI: Ethical Approval - Strathmore University



Strathmore UNIVERSITY

6th June 2023

Dr Mwangi Symon Wambugu,
swambugu@chak.or.ke

Dear Dr Mwangi,

RE: Determinants of the Uptake of National Hospital Insurance Funds among Patients at Meru Teaching & Referral Hospital, Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC1772/23**. The approval period is from **6th June 2023 to 5th June 2024.**

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 SU-ISERC.
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 SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

for: **Mr Ambrose Rachier,**
Chairperson; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICS REVIEW COMMITTEE
(SU-ISERC)
06-Jun-2023
P.O BOX 59857-00200
NAIROBI-KENYA

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

Appendix VII: Ethical Approval - NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 803467

Date of Issue: 30/June/2023

RESEARCH LICENSE

This is to Certify that Mr.. SYMON WAMBUGU MWANGI of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Meru on the topic: DETERMINANTS OF THE UPTAKE OF NATIONAL HOSPITAL INSURANCE FUND AMONG PATIENTS IN MERU TEACHING AND REFERRAL HOSPITAL, KENYA for the period ending : 30/June/2024.

License No: NACOSTI/P/23/26932

803467

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

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

See overleaf for conditions