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**ASSESSING AWARENESS AND ATTITUDES TOWARDS NATIONAL HEALTH
INSURANCE SCHEME (NHIS) UPTAKE AMONG INFORMAL SECTOR
WORKERS IN KAMPALA, UGANDA.**

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172216



**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENT FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION IN HEALTHCARE MANAGEMENT OF STRATHMORE
UNIVERSITY**

JUNE 2026

DECLARATION

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

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ABSTRACT

Background: Uganda's proposed National Health Insurance Scheme (NHIS) aims to reduce the high burden of out-of-pocket payments (41% of total health expenditure) and advance Universal Health Coverage. Success hinges on the enrolment of informal sector workers, who constitute 78–80% of the national labour force and over 80% of Kampala's economy. However, urban-specific evidence on their awareness, attitudes, and barriers to uptake has been lacking.

Objective: This study assessed awareness, attitudes, perceived barriers, preferred communication channels, and factors influencing potential uptake of the proposed NHIS among informal sector workers in Kampala.

Methods: An explanatory sequential mixed-methods design was employed, whereby a structured cross-sectional quantitative survey was administered to 384 informal sector workers across Kampala's five divisions in the first phase, followed by in-depth qualitative interviews with a purposively selected subsample of 15 participants to contextualise and explain the quantitative findings. Quantitative data were analysed using descriptive statistics, chi-square tests, and multivariate logistic regression in STATA 17.0, while qualitative data were analysed thematically using NVivo 12.

Results: Awareness of the proposed NHIS was low (14.1%), and among those aware, only 11.1% knew the proposed annual premium of UGX 100,000. Attitudes were generally positive ($M = 3.58$, $SD = 0.65$), but trust in government management was modest ($M = 3.44$, $SD = 0.91$). Key barriers included lack of information ($M = 3.45$, $SD = 0.84$), poor health worker attitudes (mean = 3.38), and irregular income ($M = 3.26$, $SD = 1.22$). Social media (74.0%) and television (58.3%) were the most preferred channels, while religious leaders were the most trusted ($M = 4.08$, $SD = 0.87$). Multivariate logistic regression showed that enrolment intent was driven by perceived net benefit ($OR = 2.85$, $p < .001$), perceived cost reduction ($OR = 2.29$, $p = .007$), and institutional trust ($OR = 1.57$, $p = .024$), rather than demographic factors. Significant geographic and occupational variations in intent were observed.

Conclusion: Informal sector workers in Kampala are willing to join the NHIS, but this willingness is conditional on closing the information gap, introducing flexible payment options, building institutional trust, and ensuring service quality. The findings underscore the need for equity-responsive design that addresses uniform premium challenges and geographic disparities to enhance uptake and advance Universal Health Coverage.

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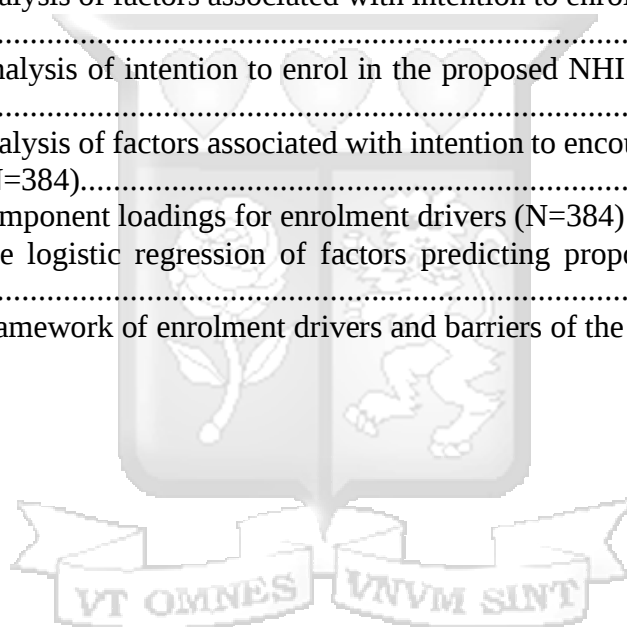
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ABBREVIATIONS AND ACRONYMS

CBHI	Community-based Health Insurance
CI	Confidence Interval
COVID-19	Coronavirus Disease 2019
DOI	Diffusion of Innovation
GDP	Gross Domestic Product
JKN	Jaminan Kesehatan Nasional (Indonesia's National Health Insurance)
KCCA	Kampala City Council Authority
KNRHREC	Kawempe National Referral Hospital Research and Ethics Committee
LC	Local Council
LMICs	Low- and Middle-Income Countries
MoH	Ministry of Health
NGO	Non-Governmental Organisation
NHIS	National Health Insurance Scheme
NVivo	Qualitative Data Analysis Software
OOP	Out-of-Pocket
OR	Odds Ratio
PCA	Principal Component Analysis
SACCO	Savings and Credit Cooperative Organisation
SD	Standard Deviation
SHI	Social Health Insurance
SHIF	Social Health Insurance Fund (Kenya)

SSA	Sub-Saharan Africa
STATA	Statistical Software for Data Analysis
SU-ISERC	Strathmore University Institutional Scientific and Ethics Review Committee
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
UHC	Universal Health Coverage
UNCST	Uganda National Council for Science and Technology
USD	United States Dollar
WHO	World Health Organisation
WIEGO	Women in Informal Employment: Globalizing and Organizing



DEFINITION OF KEY TERMS

National Health Insurance Scheme (NHIS): A government-established mechanism for raising and pooling funds administered by the public sector, the private sector, or a combination of both designed to provide health coverage to citizens, often aiming to improve healthcare accessibility and minimise out-of-pocket costs (Wikipedia, 2025).

Universal Health Coverage (UHC): All people having access to a full range of quality health services they need, when they need them, without financial difficulty (World Health Organisation, 2025).

Informal Sector Workers: Individuals engaged in income-generating activities that are not registered or regulated by formal legal frameworks, and that fall outside labour-law protections therefore they lack formal employment benefits such as health insurance and social protection (International Labour Organisation, 2015).

Community-Based Health Insurance (CBHI): A health financing mechanism in which members of a community or group with shared characteristics such as location or occupation voluntarily pool their health risks and financial contributions through uniform premiums that are independent of individual health status (World Health Organisation, 2025).

Out-of-Pocket Expenditures (OOP): Payments made directly by individuals to healthcare providers at the point of service, not reimbursed by any third party often creating financial hardship for individuals forcing them to choose between healthcare and other basic needs (Nguyen, Ahmed, & Turner, 2023; Sirag & Nor, 2021).

Social Health Insurance (SHI): A health financing mechanism traditionally based on obligatory health insurance funded through premium contributions from employers and/or employees, which has evolved to include a combination of mandatory contributions and government revenue pooling to provide financial protection and expand coverage to all population groups (Siddiqi, Mataria, & Banzon, 2014)

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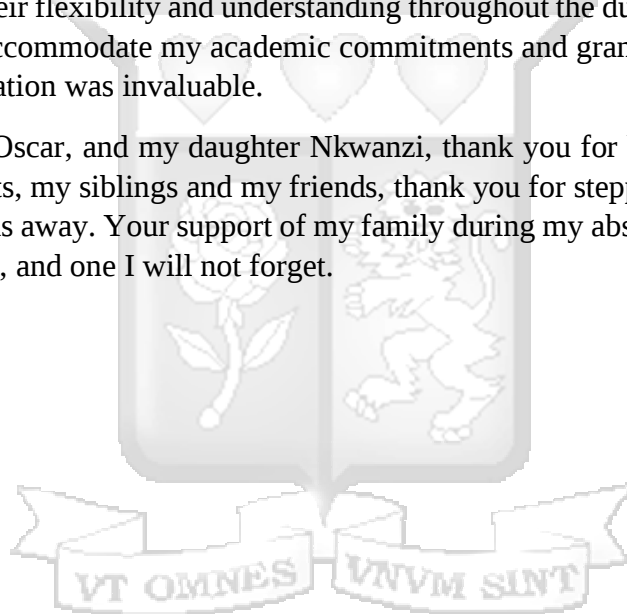
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DEDICATION

To my husband and daughter: my day ones, my constant anchors and my greatest source of strength throughout this journey.



CHAPTER ONE

INTRODUCTION

Uganda finances roughly 41% of its total health expenditure through out-of-pocket (OOP) payments; one of the highest ratios in Sub-Saharan Africa (Turyamureba, Yawe, & Oryem, 2022). For workers in Kampala's informal economy, whose income is irregular and whose access to formal protection is negligible, this reliance translates directly into delayed care, household debt, and forgone treatment. The proposed National Health Insurance Scheme (NHIS) is intended to change this.

Across Sub-Saharan Africa, governments face the same problem: how to finance healthcare equitably for populations that are largely informally employed, economically vulnerable, and geographically dispersed (Barasa et al., 2021). Countries such as Rwanda, Ghana, Kenya, and Nigeria have implemented varying forms of national health insurance, providing instructive lessons on both the potential and pitfalls of these schemes. Rwanda's Community-Based Health Insurance (CBHI) stands out for its success in achieving broad coverage and drastically reducing OOP expenditures, particularly among the rural poor (Nyandekwe, Nzayirambaho, & Kakoma, 2020). Ghana's NHIS, while initially promising, has faced challenges with sustainability and enrolment of informal workers (Ly, Bassoum, & Faye, 2022). These regional experiences offer valuable benchmarks for Uganda as it designs its own scheme.

Uganda's proposed NHIS, passed by Parliament in 2021 and awaiting presidential assent, mandates contributions from all adult citizens: formally employed workers contribute 4% of gross salary matched by a 1% employer contribution, while informal sector workers are required to pay a flat annual premium of UGX 100,000 (approximately USD 26). Subsidies are provided for the poor. The scheme's success, however, depends critically on the participation of informal sector workers, who constitute 78–80% of Uganda's labour force, contribute 51% of GDP, and represent over 80% of Kampala's economy (Sunday, 2023; Sseviiri et al., 2023).

Kampala, Uganda's capital and largest city, is home to an estimated 1.7 million people, a significant proportion of whom are engaged in informal sector activities including boda-boda riding, market vending, street hawking, artisanal trades, and casual labour (Sseviiri et al., 2023). Despite their economic significance, these workers lack stable incomes, formal employment protections, and access to health coverage. Studies from rural Uganda have documented critically low awareness of the proposed NHIS, widespread scepticism about government management of public funds, and concerns about affordability (Namuhani,

Kisakye, & Kiwanuka, 2024). However, urban informal sector workers in Kampala who have different characteristics such as greater media access, higher income heterogeneity, and different health-seeking behaviours, their specific awareness levels, attitudes, perceived barriers, and communication preferences regarding the NHIS have not been empirically documented. This research therefore seeks to fill this critical gap.

By systematically assessing the awareness and attitudes of Kampala's informal sector workers towards the proposed NHIS, identifying the barriers that may impede their enrolment, and understanding their preferred communication channels, as well as the factors that would influence them to enrol in the scheme the study aims to generate actionable evidence that can inform the inclusive and equitable design of Uganda's NHIS.

1.1 Background

Universal Health Coverage (UHC) prioritises equitable healthcare access and safeguards all individuals from financial hardship (Rasool & Geer, 2024); a goal that has become central to global health policy despite recent declines in progress (World Health Organization, 2023). This goal is especially significant for low- and middle-income countries (LMICs), where systemic weaknesses and fragmented financing structures complicate both service quality and access, making streamlining of healthcare financing structures, such as NHIS, vital for expanding coverage. (Langlois, McKenzie, Schneider, & Mecaskey, 2020; Thuong, Huy, Tai, & Kien, 2020). Health Insurance schemes provide both a financial safety net and a potent tool in health systems by lowering out-of-pocket (OOP) expenditures and promoting equitable use of health services through resource pooling and cross subsidisation across the population (Yang, Tao, & Qu, 2025; Chen & Ning, 2022). The lack of health insurance creates difficulties in receiving timely and effective healthcare leading to delayed treatment, worsening health outcomes and increasing the dangers of catastrophic medical costs mainly for disadvantaged populations (Okoro, Harland, Assimacopoulos, & Findlay, 2024; Umar, Fusheini, & Ayanore, 2020). High-income countries have generally achieved broad coverage through mandatory, income-linked contribution models, but these models presuppose a largely formalised labour market and offer limited direct lessons for contexts, such as Uganda's, where most of the workforce is informally employed (Ellis, Chen, & Luscombe, 2014).

This mismatch between contributory insurance design and informal labour realities is most acute in Sub-Saharan Africa, where the attainment of UHC is constrained by high out-of-pocket expenditure, low financial risk protection, and persistent structural, financial, and administrative barriers (Barasa, Kazungu, Nguhiu, & Ravishankar, 2021; Hooley, Afriyie,

Fink, & Tediosi, 2022; Masereka, et al., 2024), compounded by low informal-sector enrolment, weak political will, and inadequate funding (Nungo, Filippou, & Russo, 2024). In response, African governments have leveraged community-based health insurance (CBHI), social health insurance (SHI), and mixed models suited to large informal workforces to achieve UHC (Ly, Bassoum, & Faye, 2022; Eze, Ilechukwu, & Lawani, 2023); Rwanda and Ethiopia's CBHI models for instance, have been successful in extending coverage and lowering out-of-pocket payments, particularly among rural populations (Nyandekwe, Nzayirambaho, & Kakoma, 2020; Bekele, 2022). Despite these reforms, 800 million individuals across the region continue to spend a minimum of 10% of their income towards healthcare via out-of-pocket (OOP) payments (Ifeagwu, Yang, Parkes-Ratanshi, & Brayne, 2021). Within East Africa, Uganda remains the notable exception to the regional trend of adopting national health insurance, having only secured parliamentary approval of its NHIS Bill in 2021, which now awaits presidential assent (Jordanwood, Aliyi Walimbwa, & Ileana, 2021). In Uganda, private health insurances and CBHIs reach approximately 1.1% of the citizens, with coverage fragmented, voluntary, and yielding minimal risk pooling or financial protection (Uganda Bureau of Statistics, 2024); Otieno & Namyalo, 2024).

1.1.1 The Proposed National Health Insurance Scheme, Uganda

Uganda's proposed NHIS is anchored in Vision 2040's commitment to equitable access to quality health services and reduced financial strain (National Planning Authority, 2013). The urgency for this scheme is underscored by the persistent and disproportionate reliance on OOP payments constituting roughly 41% of total health expenditure and placing households, especially low-income groups, at risk of catastrophic expenditure and impoverishment (Turyamureba, Yawe, & Oryem, 2022; Makika, Matovu, Matovu, & Araya, 2022). Under the Bill, formally employed workers will contribute 4% of their gross salary, matched by a 1% employer contribution; informal sector workers face a flat annual premium of UGX 100,000 (approximately USD 26); and contributions for the poor and for refugee populations will be subsidised by the state and donor agencies respectively (Namuhani, Kisakye, & Kiwanuka, 2024; Otieno & Namyalo, 2024). This scheme also intends to integrate existing community-based insurance models to broaden service access and minimise OOP payments (Namyalo, et al., 2023). Beyond this financing architecture, however, success will depend on trust-building, transparent communication, and a health service delivery framework that prioritises the needs of informal sector workers (Namuhani, Kisakye, & Kiwanuka, 2024); conditions that are

themselves contingent on how the scheme is perceived and understood by the population it is designed to serve.

1.1.2 Awareness and attitudes of informal sector workers towards NHIS

Because awareness and attitudes directly influence individuals' intention to enrol in health insurance programs (Sarker, et al., 2017; Aji, Masfiah, Harwanti, & Ulfah, 2023), the specific channels through which informal workers receive, or fail to receive, health insurance information warrant close attention. Higher awareness typically leads to increased acceptance of health insurance benefits and recognition of potential cost savings (Mushi & Millanzi, 2019), while negative attitudes rooted in mistrust or insufficient knowledge deter engagement with available coverage options (Aji, Masfiah, Harwanti, & Ulfah, 2023; Kansra & Gill, 2016). Media exposure through radio, television, billboards and newspapers is influential in enhancing awareness and uptake of insurance (Acharya, Devkota, & Kreps, 2021), and targeted, culturally relevant messaging through these channels has been shown to improve understanding of insurance options and encourage enrolment among underserved populations (Wamono, Wandiembe, Ogumu, & Keinerugaba, 2025). Where information barriers are not addressed through communication campaigns and literacy programs, workers remain unaware of enrolment procedures, care pathways, and benefits, suppressing uptake further (Winkler, Bulmer, & Mote, 2017).

Evidence from Tanzania and Indonesia indicates that communication efforts alone are insufficient where perceptions of substandard public-facility care and limited benefit coverage persist (Abraham, et al., 2024; Dartanto, et al., 2020; Bonfert, et al., 2015). Uganda's own evidence reflects this layered problem: a national systematic review found that approximately one quarter of respondents were aware of health insurance despite widespread radio listenership, and recommended leveraging social media platforms such as WhatsApp and TikTok alongside family-level sensitisation to close this gap (Wamono, Wandiembe, Ogumu, & Keinerugaba, 2025). These patterns are inseparable from the socio-economic and employment realities of the population the NHIS is designed to reach.

1.1.3 Informal sector workers

The informal sector, characterised by the absence of formal contracts, irregular incomes, and limited regulation (Bonfert, et al., 2015), constitutes between 60% and 80% of the workforce in developing countries (Aregbeshola & Khan, 2023) and poses a distinct structural challenge for contributory insurance models: the dispersed and unstable nature of their employment makes both premium affordability and collection logistically (Barasa, Mwaura, Rogo, &

Andrawes, 2017; Dartanto, et al., 2020) and and persistently low awareness of insurance benefits among informal workers in Sub-Saharan Africa further suppresses uptake (Onasanya, 2020; Namuhani, Kisakye, & Kiwanuka, 2024). Additional obstacles include low education levels, gender and household decision-making dynamics, and limited exposure to mass media. For these reasons, CBHI models have been proposed as a more flexible and responsive alternative to contributory NHIS structures, better accommodating the income variability inherent in informal employment (Aregbeshola & Khan, 2023). In Uganda, informal workers account for 78% to 80% of the labour force and contribute approximately 51% of GDP, operating in agriculture about 40%, trade including street vending and artisanal works and other services characterised by small-scale operations, informality and a lack of legal registration (Sunday, 2023; Kakayi, 2024; Koolwal & Vanek, 2025; Besigomwe, 2024). The resulting income instability and absence of social protection leave these workers reliant on out-of-pocket expenditure precisely where contributory insurance models are least equipped to accommodate them.

Kampala's informal workforce experiences this mismatch with particular intensity. Concentrated in the transport sector such as boda-boda riding and taxi driving, market vending, street hawking, and casual labour, and constituting roughly 80% of the city's economy within an estimated population of 1.7 million (Sseviiri, Mukwaya, Nuwahereza, & Sebbanja, 2023; Ernston & Mukwaya, 2021), these workers operate within informal settlements now covering approximately 60% of the urban area, marked by insecure land tenure, substandard housing, poor infrastructure, and limited access to basic services. Vulnerable subgroups including persons with disabilities, older adults, and child-headed households face particular disadvantage in these settings, compounding poorer health and wellbeing outcomes (Chumo, Kabaria, Shankland, & Mberu, 2023; Sseviiri, Mukwaya, Nuwahereza, & Sebbanja, 2023). Combined with a high double burden of communicable diseases such as HIV/AIDS and non-communicable conditions such as diabetes, these structural conditions mean that Kampala's informal workers face both elevated health risk and the least financial protection against it. (Idrine, Crinad, & Scovia, 2024).

Addressing the structural vulnerabilities of Kampala's informal workers requires strategies that simultaneously enhance awareness, adapt insurance contribution models to irregular incomes, and build trust in governmental systems. Ensuring their meaningful participation in the proposed NHIS is therefore not only a matter of scheme viability but one of social justice and equity (Obermann, Jowett, & Kwon, 2018). Evidence from other contexts suggests that

communication strategies specifically tailored to informal workers, combined with affordability-conscious eligibility design, can meaningfully improve enrolment and retention (Barasa, Mwaura, Rogo, & Andrawes, 2017) realities (Okungu, Chuma, Mulupi, & McIntyre, 2018). How these conditions can be achieved in the Kampala context where urban informal workers are distinct from both rural Ugandan populations and informal workers in other African cities is the central question this study investigates.

1.2 Problem statement

Uganda's reliance on out-of-pocket payments for approximately 41% of total health expenditure, among the highest ratios in Sub-Saharan Africa, underscores the limitations of existing health financing arrangements and the urgency of the proposed NHIS as a corrective policy instrument. The scheme's success, however, depends substantially on informal sector workers, who constitute between 78% and 80% of Uganda's labour force and over 90% of employment in Kampala (Koolwal & Vanek, 2025; Uganda Bureau of Statistics, 2024), yet remain almost entirely uninsured. Their irregular incomes complicate consistent premium payment, and many continue to rely on self-medication, traditional healers, or forgone care, exposing households to catastrophic expenditure and deepening cycles of poverty (Namuhani, Kisakye, & Kiwanuka, 2024; World Health Organisation, 2023).

Existing Ugandan evidence on this population derives almost entirely from rural settings. A cross-sectional mixed-methods study in Iganga and Mayuge districts found that only 10.1% of informal workers were aware of the proposed NHIS, and while most held positive attitudes in principle, the majority expressed low trust in government systems to implement the scheme fairly (Namuhani, Kisakye, & Kiwanuka, 2024), and similar trust deficits have been reported in related research (Wamono, Wandiembe, Ogumu, & Keinerugaba, 2025). However, these rural findings cannot be extrapolated to Kampala. Urban informal workers differ fundamentally from their rural counterparts in terms of income dynamics, exposure to mass media such as radio, television, and social media, occupational diversity, density of health facilities, and access to financial networks such as SACCOs and mobile money platforms (Cunningham, et al., 2024).

Despite these important contextual differences, urban-specific evidence on NHIS awareness, attitudes, barriers, and communication preferences among informal workers remains limited in the literature. This gap is consequential: without understanding how these informal workers

perceive and respond to the proposed NHIS, scheme designers and policymakers lack the evidence needed to develop targeted enrolment strategies, appropriate contribution mechanisms, or effective communication campaigns for this population. The result is a real risk of poor uptake among the Kampala's largest working group, threatening both the financial sustainability of the scheme and Uganda's broader UHC agenda. This study directly addresses this gap by assessing NHIS awareness, attitudes, perceived barriers, and preferred communication channels among informal sector workers in Kampala and how they relate to enrolment intention, with the aim of generating evidence to support inclusive, equitable, and contextually appropriate NHIS design and implementation.

1.3 Overall objective of the study

To assess the determinants of intention to enrol in Uganda's proposed National Health Insurance Scheme (NHIS) among informal sector workers in Kampala, Uganda.

1.3.1 Specific objectives of the study

- I. To assess the level of awareness of the proposed NHIS among informal sector workers in Kampala and its relationship to enrolment intention.
- II. To determine the attitudes of informal sector workers in Kampala towards the proposed NHIS, including its perceived benefits, costs, and trustworthiness. And their contribution to enrolment intention.
- III. To identify the perceived barriers to the uptake of the proposed NHIS among informal sector workers in Kampala and the extent to which they constrain enrolment intention.
- IV. To explore the communication channels and information sources trusted and preferred by informal sector workers in Kampala for receiving information on the proposed NHIS.
- V. To examine factors that would influence uptake of the proposed NHIS and facilitate equitable inclusion among informal sector workers in Kampala.

1.4 Research questions

- I. What is the level of awareness of the proposed NHIS among informal sector workers in Kampala, and how does awareness relate to their intention to enrol in the scheme?
- II. What are the attitudes of informal sector workers in Kampala towards the proposed NHIS in terms of perceived benefits, costs, and trustworthiness, and to what extent do these attitudes contribute to enrolment intention?
- III. What are the perceived barriers to uptake of the proposed NHIS among informal sector workers in Kampala, and to what extent do these barriers constrain enrolment intention?

- IV. What communication channels and information sources do informal sector workers in Kampala trust and prefer for receiving information about the proposed NHIS?
- V. What factors will influence the uptake of the proposed NHIS among informal sector workers in Kampala?

1.5 Significance of the study

This study offers critical insights into the factors that will influence uptake of the scheme, awareness, perceptions, and potential barriers faced by informal sector workers in Kampala regarding Uganda's proposed NHIS. This study will provide that foundational evidence, enabling policymakers to make informed decisions about contribution flexibility, enrolment procedures, and incentives specifically calibrated to the income volatility and occupational diversity of urban informal workers. The findings are particularly timely given that the NHIS Bill is awaiting presidential assent and implementation planning is underway.

A key gap in the existing literature concerns which communication channels informal workers trust and prefer for receiving health information; existing studies in Uganda have documented low NHIS awareness and reported broad-channel media use, but neither has specifically assessed which channels are most trusted or preferred for NHIS outreach in urban informal sector contexts (Namuhani, Kisakye, & Kiwanuka, 2024; Wamono, Wandiembe, Ogumu, & Keinerugaba, 2025). By identifying the most effective channels, whether radio, community meetings, peer networks, religious gatherings, or social media, this study will enable stakeholders to design targeted, culturally appropriate sensitisation campaigns.

The existing literature on NHIS awareness and attitudes in Uganda is largely concentrated in rural settings (Namuhani, Kisakye, & Kiwanuka, 2024). While a few studies have examined willingness to pay or preferences in urban Kampala, targeted evidence on awareness, knowledge, and perceptions specifically among urban informal sector populations remains limited (Namuhani, Kisakye, & Kiwanuka, 2026; Kalyango, Kananura, & Kiracho, 2021).

Therefore, this study is among the first to generate targeted urban-specific evidence from Kampala, addressing a key gap in the Ugandan and broader Sub-Saharan African health insurance literature and providing a model that other East African cities with large informal sectors may draw upon.

1.6 Scope of the study

This study focuses on determining the level of awareness, perceptions, and attitudes of informal sector workers in Kampala, Uganda, toward the proposed NHIS. Geographically, the study is limited to Kampala, the capital city, which provides a unique urban context characterized by high informal sector participation, demographic diversity, and significant healthcare access disparities. The target population includes informal workers engaged in occupations such as market vending, boda-boda riding, street hawking, retail trade, and casual labour.

The study covers individual and contextual determinants that may affect willingness to enrol in the NHIS, including demographics, income variability, health-seeking behaviour, previous experiences with healthcare financing, and trust in public systems. It also explores barriers to enrolment such as affordability, scheme awareness, and perceptions of service quality. The study also examines communication preferences and trusted information sources for health insurance information among this population, which is critical for designing effective awareness campaigns.

The study does not include formal sector workers and rural populations outside Kampala. It also does not evaluate the actual implementation or operational effectiveness of the NHIS, as the scheme has not yet been operationalised.

1.7 Chapter summary

This chapter set the context for the study, situating Uganda's high reliance on out-of-pocket payments and the proposed National Health Insurance Scheme within the wider Sub-Saharan African challenge of financing healthcare for largely informal economies. It established the centrality of informal sector workers to the scheme's viability and identified the specific evidence gap on urban informal workers in Kampala, whose income dynamics, media exposure, and institutional access differ from the rural populations covered in the existing literature. The problem statement, objectives, research questions, significance, and scope were articulated. The next chapter reviews the theoretical and empirical literature underpinning the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the theoretical and empirical foundations underpin this study's five objectives. The theoretical review examines two frameworks namely the Diffusion of Innovation (DOI) Theory and Andersen's Behavioural Model of Health Services Use and specifies the hypothesised role of each in explaining NHIS awareness, attitude formation, and enrolment intention among Kampala's informal sector workers. The empirical review synthesises and critically evaluates existing evidence from Uganda, sub-Saharan Africa, and comparable international settings on NHIS awareness, attitudes, barriers, and communication channels among informal sector populations. The chapter concludes by identifying substantive research gaps, presenting the study's conceptual framework with specified causal pathways, and operationalising the key variables.

2.1 Theoretical review

This study is anchored on the DOI Theory and Andersen's behavioural model of health services use to examine the factors that influence the informal sector workers in Kampala to enrol in the proposed NHIS.

2.1.1 The Diffusion of Innovation Theory

The Diffusion of Innovations (DOI) Theory developed by Everett Rogers in 1962 and refined across subsequent editions, addresses how, why, and at what pace new ideas, technologies and practices spread within a social system (Mascia & Mills, 2018). In health policy implementation, the theory is particularly relevant because it explains why some populations adopt innovations quickly while others resist or delay uptake; a dynamic that is especially pronounced in complex, hierarchical healthcare systems where organisational and cultural factors compound individual-level adoption decisions (Côté-Boileau, Jean-Louis Denis, & Sabeau, 2019; Haring, Freigang, Amelung, & Gersch, 2022). For Uganda's proposed NHIS, DOI theory offers three specific analytical contributions: it predicts which perceived characteristics of the scheme will most strongly shape attitudes; it specifies which communication channels will be most effective at different stages of the adoption process; and it identifies the social system conditions particularly opinion leadership and community trust that are likely to accelerate or impede enrolment among Kampala's informal workers.

2.1.1.1 The Innovation attributes and their effect on NHIS uptake

Rogers identifies five perceived characteristics of innovations that shape adoption: relative advantage, compatibility, complexity, trialability, and observability (Kaminski, 2011). Applied to Uganda's proposed NHIS, these attributes inform both attitude formation toward the scheme and identify adoption barriers among the informal sector workers. Relative advantage refers to the perceived value of an innovation compared to existing solutions or practices (Cain & Mittman, 2002). This attribute is expected to be the strongest attitudinal driver, given that out-of-pocket expenditure currently constitutes 41% of Uganda's total health financing and imposes catastrophic costs on low-income households (Bayked, et al., 2024; Ahmed, et al., 2016). This attribute helps explain whether workers perceive NHIS as better than current healthcare payment methods and directly shapes attitudes about the scheme's value and desirability. Workers who perceive the scheme as financially protective relative to the status quo should express more positive attitudes and stronger enrolment intention. Compatibility, however, is likely to moderate this effect: the UGX 100,000 flat annual premium is structurally incompatible with the income irregularity of informal employment, creating a mismatch between the scheme's design and workers' financial reality that may suppress uptake even among those who recognise its relative advantage (International Labour Organisation, 2015; Namyalo, et al., 2023).

Complexity concerns the perceived difficulty of comprehending and utilizing the innovation effectively (Sahin, 2006). This, manifested in burdensome documentation, confusing benefit structures, and opaque enrolment procedures, is predicted to function as a direct barrier, a finding consistent with evidence from Kenya and Ghana showing that simplification of premium payment processes significantly increases uptake (Obadha, Colbourn, & Seal, 2020; Nsiah-Boateng, et al., 2023). Trialability is structurally constrained for insurance products, since workers cannot experience the benefit before committing; this creates an information asymmetry that the observability attribute partially compensates for in that workers who can observe peers benefiting from similar schemes such as through reduced illness costs or improved care access, are more likely to develop positive attitudes (Ly, Bassoum, & Faye, 2022; Nsiah-Boateng, Akweongo, Nonvignon, & Aikins, 2024). Taken together, these five attributes do not predict uniformly positive or negative attitudes; they predict an internal tension between perceived financial protection (positive) and structural incompatibility and complexity (negative) that this study tests empirically.

2.1.1.2 Communication channels: mass media, interpersonal networks and the trust gradient

DOI theory predicts that different communication channels serve distinct functions at different adoption stages, with mass media most effective for creating initial awareness and interpersonal channels more persuasive during the decision stage (Rogers, 2003). For informal sector workers in Kampala, this prediction has a specific corollary: the scepticism toward government-led schemes documented in the literature (Namuhani, Kisakye, & Kiwanuka, 2024) means that official mass media channels may successfully create awareness while failing to shift attitudes or motivate enrolment. DOI's distinction between cosmopolite sources (government agencies, national media) and localite sources (community leaders, savings group coordinators, religious figures) is directly relevant here: evidence from Sub-Saharan Africa consistently shows that localite channels carry greater persuasive weight in trust-deficient contexts, because trusted intermediaries lend the innovation their own credibility (Alhassan, Nketiah-Amponsah, & Arhinful, 2016; Onyemaechi & Ezenwaka, 2022; Nsiah-Boateng, Akweongo, Nonvignon, & Aikins, 2024). This study therefore tests whether Kampala's informal workers' channel preferences align with the stage-specific predictions DOI makes, and whether the cosmopolite-localite distinction maps onto the trust dynamics this population exhibits.

2.1.1.3 Social Systems and the informal sector

The diffusion of health insurance innovations is shaped by the broader social environment, including networks, cultural norms, and institutional trust. In Kampala, the social system shaping NHIS adoption is defined by the heterogeneity of the informal sector. Occupational groups such as taxi drivers, street vendors, mechanics, and domestic workers differ in income patterns, health risks, and social networks, leading to varied adoption dynamics. While higher-income informal workers may adopt more readily, affordability constraints remain a major barrier for lower-income groups. Geographic factors also matter; diverse residential settings influence access to healthcare facilities, information, and peer networks, affecting both awareness and practical feasibility of enrolment (Kalyango, Kananura, & Kiracho, 2021). Within these systems, opinion leaders including religious leaders, savings group coordinators, and community health workers play a pivotal role in influencing adoption by bridging formal institutions and local communities (Fadlallah, et al., 2018; Duku, Nketiah-Amponsah, Fenenga, Janssens, & Pradhan, 2022). Change agents like health officials and outreach workers can also drive uptake, though their effectiveness depends on credibility and cultural alignment (Fenny,

Kusi, Arhinful, & Asante, 2016). Community-driven initiatives, including peer-to-peer education and relatable outreach, can further build trust and highlight benefits of enrolment (Fadlallah et al., 2018).

2.1.1.4 Time and the Innovation-Decision Process in the adoption of National Health Insurance Schemes

The temporal dimension of innovation diffusion operates at both individual and population levels, with the theory's concept of stages in the innovation-decision process providing a framework for understanding how adoption unfolds over time. At the individual level, adoption typically unfolds through a five-step sequential process: knowledge, persuasion, decision, implementation, and confirmation (García-Avilés, 2020). At the knowledge stage, individuals are first exposed to the innovation and begin forming an understanding of its features. Persuasion follows as attitudes are shaped, often through interpersonal communication and observation of others' experiences. Decision marks the point at which individuals choose to embrace or resist the innovation, while implementation involves translating the decision into practice, such as completing registration and paying contributions. Finally, confirmation occurs when adopters seek reinforcement of their decision through visible benefits or social validation (Rogers, 2003). For informal sector workers in Kampala, this process is significantly shaped by prior experiences with similar schemes, perceived risks related to insurance products, and immediate health needs. Reluctance often emerges at the decision stage, where scepticism regarding the balance between costs and benefits becomes pronounced in resource-constrained contexts.

At the population level, adoption follows identifiable patterns categorized as innovators, early adopters, early majority, late majority, and laggards. Innovators are typically characterized by risk tolerance and extensive networks, while early adopters often hold higher education and social influence, enabling them to act as opinion leaders. The early majority adopts before average community members, whereas the late majority demonstrates greater scepticism and adopts under social pressure. Laggards, by contrast, resist change until alternatives are exhausted (Kaminski, 2011). In Kampala's informal sector, workers are more likely to fall within the late majority or laggard categories due to financial constraints, institutional distrust, and negative experiences with prior initiatives. Nevertheless, innovators and early adopters such as educated informal workers or cooperative leaders remain critical in catalysing diffusion through peer endorsement and demonstrable benefits.

Empirical evidence underscores that diffusion reaches maximum effectiveness when communication strategies are sequenced strategically across the stages: mass media for initial awareness, group sensitization for clarification during persuasion, and interpersonal channels for final decision-making (Rogers, 2003). Thus, the diffusion process is not linear but iterative, influenced by contextual factors like health system quality, trust, and affordability. Taken together, these findings show that the diffusion of NHI among informal workers is not a linear process but rather one shaped by context-specific interactions between innovation characteristics, communication strategies, and social systems. Innovations that are perceived as advantageous, compatible with local norms, and easy to adopt are more likely to diffuse widely, particularly when reinforced through observable benefits and social influence. Conversely, when innovations are complex, misaligned with community structures, or fail to demonstrate visible value, diffusion stagnates. By situating NHI adoption within the broader innovation-diffusion process, policymakers and practitioners can design interventions that not only promote initial enrolment but also sustain participation over time.

2.1.2 Andersen's Behavioural Model of Health Services Use

Andersen's Behavioural Model, first developed in the late 1960s and refined across subsequent decades, posits that healthcare utilisation is determined by the interaction of three categories of factors: predisposing characteristics (the socio-demographic and attitudinal attributes individuals bring to health decisions), enabling resources (the financial and organisational arrangements that facilitate or constrain access), and need factors (perceived and clinically assessed health status) (Andersen & Newman, 2005; Babitsch, Gohl, & Lengerke, 2012). For this study, the model is applied to insurance enrolment rather than healthcare utilisation directly, an adaptation that requires careful specification, since enrolment intention is a decision made in anticipation of future need rather than in response to immediate illness. The model's analytical value lies in its systematic identification of where interventions should be targeted: predisposing factors are relatively stable characteristics that define who is more or less likely to enrol; enabling factors are the modifiable resource and organisational conditions that determine whether those predisposed to enrol can actually do so; and need factors explain the health-risk calculus that motivates demand for financial protection.

2.1.2.1 Predisposing factors

Predisposing factors reflect the socio-demographic and attitudinal attributes individuals bring to the decision-making process, such as age, education, occupation, and beliefs about health

insurance (Andersen R. M., 1995). Andersen's model suggests that these predisposing characteristics, particularly education level and prior health beliefs, predict both awareness levels and attitude formation toward health insurance schemes. Workers with higher education and those who already value health insurance are expected to have higher awareness and view NHIS more positively, while predisposing beliefs about health and trust in institutions shape whether workers approach the scheme with optimism or scepticism. Income level and education are among the most significant factors with higher income and education associated with greater likelihood of enrolling in health insurance schemes (Okumu, Wanyonyi, & Wabuya, 2024; Mwinuka, Echokab, & Nyaberi, 2022). Age also plays a role, as older individuals are generally more likely to have insurance coverage (Keinerugaba, Wamono, Wandiembe, & Oyem, 2025). Gender and the household head's gender can influence uptake, with some studies noting higher enrolment among women and female-headed households (MA, JA, DO, DO, & MA, 2021). Marital status and household size are additional factors, though their effects can vary by context (Kituku, Amata, & Wachira, 2016; Okumu, Wanyonyi, & Wabuya, 2024). Beyond these demographic characteristics, perceptions about health insurance constitute a key predisposing determinant of uptake among informal sector workers. Lack of awareness about the need for health insurance, misconceptions, mistrust, and insufficient information are major attitudinal barriers that reduce enrolment rates (Kansra & Gill, 2017) (Dror, et al., 2016).

2.1.2.2 Enabling factors

Enabling factors represent the resources and organizational arrangements that facilitate or hinder access, including income, affordability of premiums, and the availability of insurance schemes (Andersen R. M., 2008). These factors are particularly relevant for identifying barriers to NHIS enrolment, as deficits in these factors directly impede access even when other conditions are favourable. Among informal sector workers, particularly in Kampala and other LMICs, irregular income and limited formal benefits make affordability and the ability to pay premiums the most critical determinants of uptake (Mwinuka, Echokab, & Nyaberi, 2022; Sekyi, Adom, & Wiafe, 2023). Income irregularity represents a fundamental enabling factor deficit that prevents consistent premium payment, while lack of affordability directly constrains workers' financial capacity to enrol regardless of their awareness or attitudes toward health insurance. Flexible payment mechanisms, such as instalments and mobile money platforms, have been shown to improve accessibility and encourage enrolment (Okungu, Chuma, Mulupi, & McIntyre, 2018; Barasa, Mwaura, Rogo, & Andrawes, 2017).

Awareness and understanding of insurance schemes also play a central role, with inadequate knowledge significantly reducing participation. Lack of knowledge about NHIS benefits, enrolment procedures, and coverage details functions as an enabling barrier that prevents informed decision-making; targeted education and health literacy interventions can therefore enhance uptake by addressing this knowledge deficit (Sales, Reyes, Ting, & Dante Salvador, 2020). Distance to health facilities similarly represents an enabling factor deficit that creates access barriers, as geographic remoteness increases transaction costs and reduces the perceived value of insurance coverage.

Policy environments that promote inclusive health insurance designs hold the potential to enable informal sector workers to access health coverage. Evidence suggests that the implementation of mandatory insurance schemes could enhance participation rates among informal workers (Alawode & Adewole, 2021). Subsidies for vulnerable groups, integration with community-based schemes, and strong regulatory frameworks that promote accountability are essential enabling conditions that can overcome affordability and accessibility barriers (Agyepong, et al., 2016). Finally, trust in government institutions and scheme administrators is decisive, as scepticism about corruption and mismanagement can inhibit enrolment; enhancing transparency, accountability, and community engagement is therefore vital for the success of Uganda's proposed NHIS (Muntalima, Silumbwe, Zulu, Mweemba, & Hangoma, 2023). This study will assess which enabling factor deficits; whether income irregularity, lack of affordability, distance to health facilities, insufficient knowledge, or lack of trust constitute the most significant barriers for Kampala's informal workers, examining how these resource and organizational constraints prevent enrolment even among those with favourable predisposing characteristics and recognized healthcare needs.

2.1.2.3 Need factors

Need factors, both perceived (self-assessed health risks) and evaluated (clinically diagnosed conditions), drive the actual demand for healthcare and related financial protection mechanisms (Gelberg, Andersen, & Leake, 2000). Individuals often gauge their vulnerability to illness, including the presence of chronic conditions, which strongly influences their willingness to enrol in health insurance (Alhassan Y. , 2018). Those living with chronic diseases are particularly motivated to secure insurance as a safeguard against recurrent healthcare costs arising from frequent hospital visits (Mirach, Demissie, & Biks, 2019). Similarly, older adults and those in poorer health are generally more inclined to participate in insurance schemes (Ottie-Boakye, Bawah, Dodoo, & Anarfi, 2024; Ali & Ebaidalla, 2019). Past experiences with

medical expenditures also shape perceptions of need, with catastrophic out-of-pocket costs compelling households to seek financial protection through insurance (Akazili, et al., 2017). This study will examine how need factors cluster with predisposing and enabling factors to predict attitudes toward NHIS, exploring whether perceived health risks and existing health conditions create more positive perceptions of the scheme's value among Kampala's informal workers.

2.2 Theoretical limitations

While both DOI Theory and Andersen's Behavioural Model provide valuable insights, each has limitations that must be acknowledged, justifying their integration in this study to create a more comprehensive explanatory framework.

DOI Theory's limitations include several key concerns. First, the theory assumes rational decision-making based on perceived innovation attributes, but in resource-constrained settings, adoption may be limited by affordability regardless of positive perceptions (Wejnert, 2002). Second, DOI theory emphasizes individual adoption decisions, potentially underestimating the role of structural barriers like policy design, institutional capacity, and systemic inequality that affect informal workers (Greenhalgh, Robert, Macfarlane, & Kyriakidou, 2004). Third, the theory's focus on communication channels may overestimate the role of information while underestimating experiential learning from healthcare system failures that create deep-seated distrust (Berwick, 2003). Finally, DOI's assumption of voluntary adoption may not fully apply to mandatory health insurance schemes, where enrolment is expected rather than optional (Rogers, 2003). These limitations suggest that DOI Theory, while useful for understanding innovation characteristics and communication processes, must be complemented by models that account for structural and systemic factors.

Andersen's Model similarly presents limitations requiring acknowledgment. First, the model was originally developed in Western, high-income contexts and may not fully capture the realities of informal sector workers in low-income countries, where structural inequalities and weak health systems play larger roles than the model accounts for (Babitsch, Gohl, & Lengerke, 2012). Second, the model's focus on individual and household factors may underestimate community-level and policy-level determinants of insurance uptake (Aday & Andersen, 1974). Third, the distinction between predisposing, enabling, and need factors is not always clear-cut for example, chronic illness which is a need factor may also predispose someone to value

insurance, creating potential conceptual overlap (Andersen R. M., 2008). Fourth, the model was designed primarily for healthcare utilization rather than insurance enrolment, requiring adaptation for this study's context (Gelberg, Andersen, & Leake, 2000). Finally, the model assumes that need drives healthcare seeking, but in contexts where distrust of healthcare systems is high, even high need may not translate to insurance enrolment (Phillips, Morrison, Andersen, & Aday, 1998).

By integrating these two theories, this study addresses the limitations of each. Andersen's model compensates for DOI's insufficient attention to structural barriers by systematically examining predisposing, enabling, and need factors that shape access beyond innovation perceptions. Conversely, DOI Theory addresses Andersen's limited treatment of communication and diffusion processes by explaining how information flows through channels and how innovation attributes shape attitudes. Together, they provide a more robust framework for understanding NHIS awareness, attitudes, barriers, and communication preferences among Kampala's informal sector workers.

2.3 Empirical Review

Empirical research on NHIS uptake in the informal sector highlights recurring challenges related to awareness, attitudes, barriers, and communication dynamics, yet literature focused on examining these among urban informal workers in Kampala is largely absent. This review therefore draws on evidence from comparable settings globally, across LMICs, and in Uganda, to identify patterns and gaps pertinent to Kampala. Throughout, findings are explicitly assessed for their applicability to Kampala's unique urban context, characterized by occupational diversity, higher media access, and greater income variability than rural Uganda.

2.3.1 Level of awareness of NHIS among informal sector workers

Across LMICs, NHIS awareness among informal sector workers is consistently documented as low, but the magnitude, correlates, and policy implications of this deficit vary in ways that matter for Kampala. In Punjab, India, a study found 48.3% awareness among 630 informal workers, a figure more than four times higher than the 10.1% documented in Uganda's rural informal sector (Kansra & Gill, 2016; Namuhani, Kisakye, & Kiwanuka, 2024). This gap is not simply a function of development context: Nigeria's urban market women showed 57.5% awareness (Okiche, Okiche, Isife, Obi-Ochiabutor, & Ogbuabor, 2021), while Zimbabwe's informal workers in Harare showed very low awareness of the national scheme despite 84.8%

familiarity with private insurance concepts (Chipunza & Nhamo, 2023). These divergences suggest that urban proximity to media and institutions raises awareness in some contexts but not others, and that familiarity with commercial insurance does not automatically extend to knowledge of government schemes. Critically, the determinants of awareness also vary: education, income, occupation, age, and religion have all been identified as significant predictors, but no consistent hierarchy of determinants emerges across studies, reflecting context-specific mediating factors that include media penetration, government outreach intensity, and community social capital.

The Ugandan evidence is particularly concerning. A study showed that only 1.6% of rural informal workers could articulate the prepayment purpose of NHIS despite 10.1% awareness demonstrating a qualitative gap between knowing a scheme exists and understanding what it offers. This distinction has direct implications for intervention design: awareness campaigns that generate name-recognition without functional understanding may produce survey-level 'awareness' without the attitude formation that DOI's persuasion stage requires. No study has assessed NHIS awareness specifically among urban informal workers in Kampala, where higher media access, greater occupational diversity, and proximity to government institutions may produce both higher awareness and different correlates than those documented in rural Uganda.

2.3.2 Attitude towards NHIS among informal sector workers

The cross-national evidence on attitudes toward national health insurance schemes presents a consistent surface pattern; broadly favourable attitudes coexisting with persistent reluctance to enrol, that masks significant variation in the mechanisms producing this pattern. In Uganda, a study documented that 87.1% of informal workers believed the proposed NHIS could be beneficial and 85.2% expressed willingness to participate, yet the same participants expressed deep scepticism about government competence to manage the scheme (Namuhani, Kisakye, & Kiwanuka, 2024). This enthusiasm-distrust paradox is not unique to Uganda: A qualitative study in Indonesia found that attitudes were shaped by three distinct mechanisms namely personal health risk calculus, social network influence, and prior insurance experience, with financial constraints and religious objections introducing negative attitudes that cut across otherwise favourable assessments (Dartanto, et al., 2020). Another longitudinal study using panel data from Ghana further complicates the picture by demonstrating that attitudinal determinants are not homogeneous: among men, age, marital status, and existing health problems predicted positive attitudes, while among women and urban residents, financial

capacity was the dominant factor (Sekyi, Domanban, & Agbenyo, Exploring heterogeneity of national health insurance scheme enrolment among persons in the informal sector, 2022). These between-group variations have direct methodological implications: studies using composite attitude scores across heterogeneous informal sector populations may mask subgroup divergences that are precisely the variation policy interventions need to address.

Two methodological concerns limit the transferability of these findings to Kampala. First, the Ugandan evidence comes exclusively from rural districts (Iganga and Mayuge), where the absence of private insurance alternatives, lower educational attainment, and different income patterns may produce systematically different attitudinal baselines than Kampala's urban informal workers, many of whom have prior exposure to private health insurance schemes. Second, the Indonesian and Ghanaian studies, while methodologically rigorous, were conducted in contexts where national health insurance schemes were already operational, meaning attitudes were informed by actual experience with the scheme rather than hypothetical evaluation as in Uganda's pre-implementation context. Whether the enthusiasm-distrust paradox documented in rural Uganda holds, intensifies, or resolves differently among Kampala's informal workers is an empirical question this study addresses.

2.3.3 Barriers to NHIS uptake among informal sector workers

The barrier evidence across LMICs is more methodologically consistent than the awareness or attitude literature, with affordability and institutional trust emerging as the two dominant structural constraints across diverse settings. A survey of Nigerian artisans documented a sharp awareness-enrolment gap: 89% awareness, 77.5% willingness to participate, but only 11% actual enrolment; a pattern that implicates not attitudinal barriers but structural ones, including premium cost, facility proximity, and service utilisation difficulties such as queuing and registration delays (Osunde, Olorunfemi, & Oduyemi, 2023). A systematic review across 16 African countries corroborated that contributory flat-rate premiums are structurally ill-suited to informal sector income profiles, regardless of the setting, and that tax-funded or heavily subsidised models consistently outperform contributory schemes in enrolment and financial protection (Ly, Bassoum, & Faye, 2022). A Tanzanian analysis added an enforcement dimension: mandatory schemes theoretically resolve the adverse selection problem that voluntary contributory systems face, but enforcement is practically unworkable in low-income informal sector contexts, creating a structural design dilemma with no easy resolution (Mori, 2023).

These studies taken together converge on a finding that is directly relevant to Uganda: the principal barriers to NHIS uptake among informal workers are not primarily attitudinal since most workers express favourable attitudes, but structural. The premium payment model, the quality of services covered, institutional trust, and proximity to facilities are the operative constraints. This convergence has an important implication for this study's analytical framework: if structural enabling deficits are the primary barriers, then interventions targeting awareness or attitude change alone however well-designed from a DOI communication-channel perspective will be insufficient to achieve meaningful enrolment. The relative weight of attitudinal versus structural barriers among Kampala's informal workers is a question this study directly tests in its analysis.

2.3.4 Communication channels and information sources for NHIS

Communication strategies and information sources are central to raising awareness and shaping attitudes towards health insurance among informal sector workers, with research revealing the critical importance of trusted sources and culturally appropriate channels. The communication evidence across studies consistently supports DOI's prediction that interpersonal and community channels are more effective than mass media for converting NHIS awareness into enrolment decisions, but introduces several complications relevant to Kampala's context. A study done in Indonesia found that social networks such as family, peer groups, religious leaders, community leaders, and healthcare workers exerted greater influence than mass media campaigns, with experiential knowledge from trusted sources proving more decisive than official information (Dartanto, et al., 2020). In Nigeria, a study found that healthcare professionals (43.5%) and television or social media (41.3%) were the primary information sources, with friends and relatives substantially lower (10.9%); a divergence from the Indonesian pattern that likely reflects Nigeria's higher urban media penetration (Osunde, Olorunfemi, & Oduyemi, 2023). A content analysis of 108 Nigerian publications identified a critical implementation gap: existing NHIS communication strategies relied overwhelmingly on mass media, English-language, and top-down messaging, with minimal community engagement or indigenous language use, limiting effectiveness precisely among the rural and informal sector populations the strategies were designed to reach (Hassan & Mohammed, 2021).

A Ugandan study of agricultural innovation adoption offers a methodologically transferable finding: weak ties (neighbours, extension workers) coupled with mobile phone use were more effective for spreading innovation information than strong ties (close family), challenging the

assumption that close social networks are always the most influential adoption channels (Freeman & Qin, 2020). If this pattern holds in the NHIS context, it suggests that peer outreach strategies targeting savings group members, boda-boda associations, and market vendor networks which are loose, occupationally defined ties rather than family networks may be more effective than community or family-centred campaigns. For Kampala's informal workers specifically, who have comparatively greater social media access and urban network diversity, the relative effectiveness of digital channels versus community-leader channels for NHIS outreach has not been established. This study contributes evidence on this question by mapping channel preferences and trust ratings against the demographic and occupational characteristics of the sample.

2.3.5 National Health Insurance experiences in other countries.

International NHIS experiences provide a comparative lens for interpreting the Ugandan context but must be evaluated critically for their transferability. Ghana's NHIS, the most studied scheme in Sub-Saharan Africa, demonstrates that a well-resourced national scheme can still fail to reach informal workers without deliberate targeting: despite tax-funded design and over a decade of operation, informal sector enrolment has remained persistently low due to low awareness, premium unaffordability, and distrust of government (Alhassan, Nketiah-Amponsah, & Arhinful, 2016; Agyepong, et al., 2016).

Indonesia's JKN experience offers more methodologically direct lessons. A documented pattern of irregular premium payment, adverse selection, and high dropout among informal workers whose income variability made consistent contributions difficult has produced specific policy adaptations such as monthly premium flexibility and mobile payment options that Uganda can consider at the design stage rather than as post-hoc corrections. Kenya's Social Health Insurance Fund, by contrast, illustrates that urban proximity to information does not automatically convert to enrolment: awareness is relatively higher in urban Kenya, but enrolment among informal workers remains low due to affordability concerns and distrust of fund management (Barasa, Mwaura, Rogo, & Andrawes, 2017; Okungu, Chuma, Mulupi, & McIntyre, 2018). Rwanda's Mutuelle de Santé is the most frequently cited success case, having achieved coverage exceeding 80% within a decade through mandatory enrolment, tiered premium structures, community health worker integration, and government subsidies for the poorest quintile (Nyandekwe, Nzayirambaho, & Kakoma, 2020). Rwanda's achievement, however, reflects a specific political economy that is a strong centralised government authority, sustained political commitment, and community enforcement mechanisms that Uganda's more

decentralised and trust-deficient institutional context does not share. The lesson from Rwanda is therefore not that mandates work everywhere, but that flexible premium design, community enrolment infrastructure, and subsidy targeting are the design elements that matter most when political enforcement capacity is limited. These lessons directly inform the present study's focus on the factors that influence uptake, awareness, attitudes, barriers, and communication preferences for the uptake of the proposed NHIS among Kampala's informal workers.

2.4 Research gaps from literature

This summarises the key research gaps identified from the literature. Each gap is framed in terms of its theoretical or contextual significance

Table 1: Research gaps from literature

Author & year	Title	Key findings	Identified gap
Kansra & Gill (2016)	India; cross-sectional survey, n=630 informal workers	48.3% awareness; occupation and education predict awareness levels	No evidence on whether the awareness–attitude–uptake pathway is sequential or simultaneous, nor on how this pathway operates in Sub-Saharan Africa where institutional trust profiles differ fundamentally.
Okiche et al. (2021)	Nigeria; survey, female market traders only, n=353	57.5% awareness, 73.4% willing to join, 13% enrolled	Awareness–enrolment gap mechanism unexplained: whether the gap is primarily attitudinal, structural, or informational remains untested in this population. Gender-only sample leaves male informal workers' determinants unexamined.
Dartanto et al. (2020)	Indonesia; qualitative, n=29; scheme already operational	Social networks shape enrolment; financial constraints limit contributions	Findings reflect attitudes toward an operational scheme; the pre-implementation attitudinal context, where no direct experience exists, may generate fundamentally different adoption dynamics. The communication channel hierarchy is untested in African informal sector contexts.
Chipunza & Nhamo (2023)	Zimbabwe; survey, urban informal workers, n=388	High willingness to pay; affordability is main barrier; education and income are determinants	The relative contribution of attitudinal versus structural barriers to enrolment intention and whether these operate independently or interactively is not modelled. No qualitative component to explain the mechanisms behind quantitative associations.
Namuhani, Kisakye, & Kiwanuka (2024)	Uganda; mixed-methods, rural informal workers, n=853	10.8% awareness; positive attitudes but deep institutional distrust	Findings are confined to rural Uganda. Urban informal workers in Kampala differ in media access, income dynamics, institutional exposure, and occupational diversity. Whether the awareness–trust paradox holds, intensifies, or is resolved differently in Kampala is unknown.
Ly, Bassoum, & Faye (2022)	16 African countries; narrative review	Flat premiums create affordability barriers; subsidised models outperform contributory schemes	The review does not disaggregate by urban/rural context or by pre-launch versus operational scheme conditions. The barrier profile for urban informal workers facing a not-yet-implemented contributory scheme is unaddressed.
Hassan & Mohammed (2021)	Nigeria; content analysis, 108 publications	Mass media and English-language messaging dominate; community engagement absent	The study analyses communication strategies used, not those preferred or trusted by informal workers. Preferred channels are unstudied for Uganda's informal sector, meaning evidence-based communication design for NHIS outreach in Kampala is currently impossible.
Freeman & Qin (2020)	Uganda; agricultural innovation adoption	Weak ties and mobile phones drive adoption more than strong ties	DOI theory applied to agricultural inputs, not health insurance. Whether weak-tie network dynamics operate similarly for health insurance adoption among Kampala's urban informal sector is untested.

2.5 Conceptual framework

This conceptual framework is anchored in Rogers' DOI Theory, which explains adoption through the interaction of innovation attributes, communication channels, time (stages of adoption), and the social system. According to the DOI theory, adoption of any innovation undergoes five sequential stages: knowledge, persuasion, decision, implementation, and confirmation but since the NHIS in Uganda has not yet been implemented, this study focused on the first three stages of this process which were represented in the framework by awareness, attitudes, and uptake of NHIS. These domains aligned directly with the study objectives of assessing awareness, examining attitudes, identifying barriers, and exploring preferred communication channels. Andersen's Behavioural Model of Health Services Use complements DOI by showing how predisposing, enabling, and need factors influence diffusion outcomes. In the framework these factors are individual, health system, institutional and social system factors. They can function as either enablers or barriers to adoption, depending on the individual and contextual circumstances.

The framework therefore specifies five hypothesised relationships, each aligned to a study objective. H1 holds that awareness of the proposed NHIS is positively associated with enrolment intention (Objective I). H2 holds that favourable attitude such as perceived net benefit, perceived cost reduction, and institutional trust are positively associated with enrolment intention (Objective II). H3 holds that perceived barriers, understood as negative predisposing and enabling factors, constrain enrolment intention (Objective III). H4 holds that trusted communication channels shape awareness and attitude formation (Objective IV). H5 holds that, taken together, these factors influence uptake and facilitate equitable inclusion in the scheme (Objective V), which constitutes the overarching outcome of the framework. Figure 1 presents these relationships, with the arrows indicating the hypothesised direction of influence.

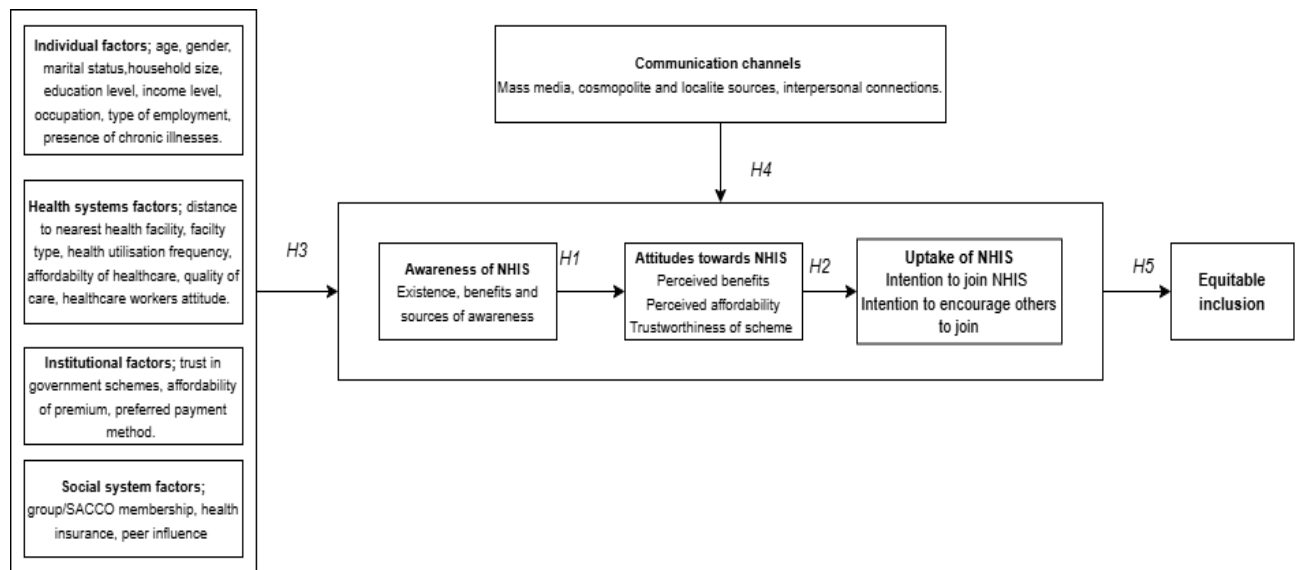
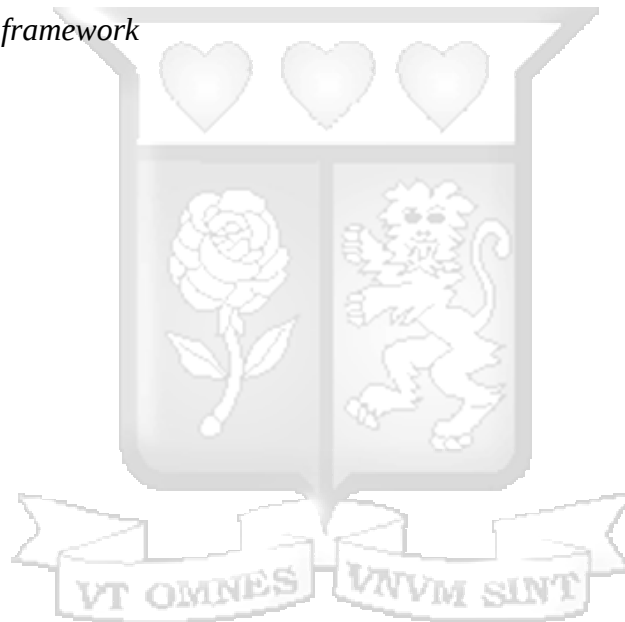


Figure 1: Conceptual framework



2.6 Operationalisation of variables

The key constructs from the conceptual framework were translated into measurable variables, each clearly defined and assigned an appropriate measure. The operationalisation also specified the measurement tools and methods of analysis that were applied.

Table 2: Operationalisation of variables

Variable	Sub-variable	Indicator	Measure	Tool	Method of Analysis
Individual factors	Socio-demographic & economic profile	Age, sex, education, marital status, occupation, income, household size, dependents	Categorical; continuous; ordinal	Nominal categories; count; UGX income brackets	Descriptive statistics, Chi-square
	Health status & behaviour	Self-rated health, chronic illness, recent illness, treatment-seeking behaviour	Likert, nominal, binary	5-point self-rating scale; yes/no binary items	Descriptive, Chi-square
Health system factors	Access & experience	Distance to facility, facility type, utilization, difficulties paying for care, health worker attitudes	Continuous, nominal, Likert, In-depth interviews	Kilometre estimate; facility-type categories; 5-point Likert; In-depth interviews	Descriptive, Correlation, thematic analysis
Institutional factors	Trust & perceived value	Current insurance, trust in government, perceived benefit vs cost, affordability of UGX 100k, benefit package	5-point Likert scale, In-depth interviews	5-point Likert scale; In-depth interviews	Descriptive, Logistic regression, Thematic analysis
Social system factors	Social influence & cultural factors	Savings group/SACCO membership, peer/family influence, religious beliefs, irregular income as barrier	Nominal, 5-point Likert	Binary membership item; 5-point Likert scale	Descriptive, Chi-square
Communication channels	Information sources & preferences	Sources of awareness, preferred channels, trust in channels	Multiple response, ranking, Likert, in-depth interviews	Multiple-response checklist; preference ranking; 5-point Likert; In-depth interviews	Descriptive statistics, thematic analysis
Awareness of NHIS	Level & depth of awareness	Prior awareness, source of awareness, knowledge of premium & benefits	Yes/No + knowledge score, in-depth interviews	Yes/no binary item + knowledge score items; In-depth interviews	Descriptive, Chi-square, thematic analysis
Attitudes towards NHIS	Perceived benefits & trustworthiness	Reduction in costs, improved access, benefit for informal workers, trustworthiness	5-point Likert scale, in-depth interviews	5-point Likert scale; In-depth interviews	Mean scores, t-test, PCA. Thematic analysis
Uptake of NHIS / Equitable Inclusion	Intention to enrol & conditions	Intention to enrol, intention to encourage others, conditions for enrolment	5-point Likert + binary	5-point Likert scale + binary (likely / unlikely to enrol)	Bivariate analysis + Multivariate logistic regression

2.7 Chapter summary

This chapter reviewed the theoretical and empirical foundations of the study. Rogers' Diffusion of Innovations Theory and Andersen's Behavioural Model of Health Services Use were examined and shown to be complementary, with each addressing the limitations of the other in explaining NHIS adoption among informal workers. The empirical review synthesised evidence on awareness, attitudes, barriers, and communication channels from Uganda, Sub-Saharan Africa, and comparable international settings, and confirmed the urban evidence gap. The chapter culminated in the conceptual framework and operationalisation of variables, providing the analytical scaffolding for the methodology described in the next chapter.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the methodological approach adopted to achieve the study objectives. It details the research philosophy, design, sampling procedures, data collection methods, and analytical techniques used to address the research questions. The chapter also describes the measures put in place to ensure research quality and the ethical considerations applied throughout, so that the findings are valid, reliable, and ethically grounded. The overall aim was to generate credible evidence that could inform policy decisions on the rollout of the proposed NHIS in Uganda.

3.1 Research philosophy

This study adopted a pragmatic research philosophy, which emphasises real-world problem solving through the combined and sequential use of quantitative and qualitative methods (Dawadi, Shrestha, & Giri, 2021; Creswell & Creswell, 2018). Pragmatism aligned with the study's objectives: measuring awareness through survey data, exploring attitudes and communication preferences using both numeric and descriptive evidence, and understanding barriers through statistical and contextual analysis. It allowed flexibility in using structured questionnaires for measurable constructs and open-ended questions for deeper insights (Feilzer, 2009). This approach suited the study's applied, policy-oriented focus and the diversity of Kampala's informal sector, accommodating varied experiences across occupations and income levels. Guided by pragmatism, methodological choices were driven by their capacity to generate practical, contextually relevant evidence to inform inclusive design and implementation of Uganda's proposed NHIS.

3.2 Research design

This study employed an explanatory sequential mixed-methods design in which a quantitative phase is conducted first and its findings used to inform a subsequent qualitative phase that explains and contextualises the quantitative results (Creswell & Clark, 2018). A cross-sectional quantitative survey was administered to respondents to measure and describe current levels of awareness, attitudes, perceived barriers, preferred communications channels and enrolment intention regarding the proposed NHIS. Data were collected at a single point in time, appropriate given that the study aimed to assess the current state of knowledge and opinion

prior to the NHIS coming into force. Then in-depth qualitative interviews were conducted with a purposively selected subsample drawn from within the survey sample, with the purpose of contextualising, explaining, and adding interpretive depth to the patterns observed in the quantitative data. These two phases were integrated at the interpretation stage, where quantitative findings were triangulated with qualitative themes to produce a more complete account of the determinants of enrolment intention than either method alone could generate.

3.3 Population and sampling

3.3.1 Study setting

The study was carried out in Kampala City, the capital and largest urban centre of Uganda. Kampala is situated in the Central region of Uganda, on the northern shores of Lake Victoria. It serves as the country's administrative, political, commercial and cultural hub, and is the primary entry point for international trade and investment.

Kampala was selected as the study site for several reasons. First, it has the highest concentration of informal sector workers of any city in Uganda, with approximately 80% of its economy driven by informal activity, employing the majority of the city's estimated 1.7 million residents (Sseviiri, Mukwaya, Nuwahereza, & Sebbanja, 2023). Second, as Uganda's capital and most economically significant city, Kampala is where the proposed NHIS is most likely to be piloted or first operationalized, making urban attitudes and awareness particularly policy-relevant. Third, the city's occupational, demographic, and socioeconomic diversity offers a rich context for studying the multi-dimensional determinants of NHIS uptake that would not be available in smaller less heterogeneous cities. Administratively, the city is divided into five divisions; Central, Kawempe, Makindye, Nakawa, and Rubaga each hosting vibrant informal employment clusters that sustain a significant portion of the city's economy.

3.3.2 Target population

The target population consisted of informal sector workers residing in Kampala, comprising six occupational groups: (i) transport workers such as boda-boda riders, taxi drivers; (ii) market vendors and street hawkers; (iii) artisans including mechanics, tailors, and carpenters; (iv) service providers like hairdressers, mobile money agents, and security guards; (v) construction workers comprising casual laborers and masons, and (vi) shop proprietors.

Inclusion criteria: Adults aged 18 and above, with no upper age restriction, who had been engaged in informal economic activities in Kampala for at least six months, earning income

primarily from informal work, and were capable of giving informed consent to take part in the study.

Exclusion criteria: Individuals in formal employment, students engaged in informal work temporarily, and those incapable of giving informed consent due to cognitive or other impairments.

3.3.3 Sampling design

A multistage sampling technique was applied to ensure occupational and geographic diversity. In Stage 1, Kampala was stratified into its five administrative divisions namely Central, Kawempe, Makindye, Nakawa and Rubaga ensuring geographic representation across the city. In Stage 2, within each division, informal sector workers were selected through convenience sampling across the key occupational categories. To minimise selection bias in the survey sample, recruitment was deliberately varied across time and location. Participants were recruited in the morning, afternoon, and evening to capture workers with different schedules, and sampling was conducted across multiple locations within each division, including markets, boda-boda and taxi stages, commercial centres, and residential trading areas. Despite these mitigation efforts, the non-probabilistic nature of convenience sampling means that findings should not be generalised to all informal sector workers in Kampala beyond the analytical patterns identified. The study's contribution lies in the associations and relationships it identifies, not in producing population-level prevalence estimates. Also, the planned proportional distribution across the six occupational categories was not strictly maintained during fieldwork, but the target number of participants was reached within each group, preserving analytical capacity for occupation-disaggregated analysis.

3.3.4 Sample size

The quantitative sample size was determined by using Fisher's formula for large or unknown populations. Kampala has an estimated population of 1.7 million people, of whom approximately 80% were estimated to be engaged in informal sector work.

Using Fisher's formula:

$$n_0 = \frac{Z^2 \times p \times (1 - p)}{d^2}$$

Where: n_0 = sample size, Z = Z-value for desired confidence level (95%), p = estimated proportion, d = margin of error

Given: $Z = 1.96$, $p = 0.5$, $d = 0.05$

$$n_0 = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 384.16 \sim 384.$$

A total of 384 participants was required to achieve a 95% confidence interval level with a 5% margin error and stratified across Kampala's five divisions and occupational categories. No additional participants beyond this number were recruited; the non-response rate was minimal at less than 5% because of high accessibility of target population, use of trained and experienced research assistants, flexible interview timing to accommodate participants' schedules, the relatively short duration of questionnaire (30-40 minutes) and the provision of small token of appreciation to compensate for their time.

Alongside the main survey, a qualitative subsample of 15 participants was purposively selected from within the survey sample for the in-depth interviews, with three participants drawn from each of Kampala's five administrative divisions. Purposive sampling was adopted for the qualitative subsample because it enables the researcher to select information-rich cases most likely to illuminate the phenomenon under study, rather than aiming for statistical representativeness (Creswell & Creswell, 2018; Patton, 2002). Subsample selection prioritised breadth of occupation, gender, income level, and length of time engaged in the informal sector, so that the qualitative data would capture a range of lived experiences. Unlike the quantitative sample, which was determined by statistical formula, the qualitative subsample size was guided by the principle of data saturation until responses yielded no new themes or meaningful variation, at which point thematic sufficiency was considered achieved. The sample of 15 is consistent with purposive qualitative subsampling norms in explanatory sequential mixed-methods health research (Guest, Bunce, & Johnson, 2006; Creswell & Creswell, 2018).

3.4 Data collection methods

3.4.1 Structured questionnaire

The structured questionnaire comprised six sections with 41 items mapped to the study variables. Section A collected background information on individual, social system, health

system, and need factors; Section B assessed awareness of the proposed NHIS; Section C examined attitudes towards the scheme, including perceived benefit, affordability, and institutional trust; Section D identified perceived barriers across financial, informational, structural, and cultural dimensions; Section E captured communication channel preferences and trust in information sources; and Section F measured intention to enrol and conditions for enrolment. Items were adapted from instruments previously used in comparable NHIS awareness and attitudes studies (Namuhani, Kisakye, & Kiwanuka, 2024; Chipunza & Nhamo, 2023) and aligned with the study's conceptual framework. The questionnaire was administered to all 384 participants in the quantitative sample and was available in English. It was administered face-to-face by trained research assistants who read items aloud and recorded responses electronically using KoBoToolbox.

3.4.2 In-depth interview guide

The in-depth interview guide was structured around five thematic areas corresponding to the study's qualitative objectives: (i) understanding of and prior exposure to the proposed NHIS; (ii) attitudes toward the scheme and the conditions under which those attitudes could change; (iii) perceived barriers to enrolment and how they might be addressed; (iv) trusted communication channels and information sources; and (v) factors that would facilitate equitable inclusion in the scheme. The guide used open-ended prompts rather than structured items, allowing participants to introduce themes not anticipated by the deductive framework while ensuring that all five thematic areas were covered within each interview. Interviews were conducted in Luganda or English according to participant preference, lasted between 35 and 50 minutes, were audio-recorded with participant consent, and were transcribed and translated into English for analysis.

3.4.3 Pre-testing and quality control

The questionnaire was pre-tested with 30 informal sector workers in Kira Municipality, Wakiso District who were not included in the main study. Pre-testing assessed comprehension of items, appropriate response time, and whether items produced meaningful variation in responses. The responses and feedback were used to identify ambiguous language, culturally inappropriate phrasing, and items that failed to discriminate between respondents. Items were revised or replaced where pre-testing indicated poor comprehension or construct misfit. The final instrument was translated into Luganda and back-translated into English to verify conceptual equivalence, and all fieldwork interviews were conducted in the participants' preferred language.

Research assistants were trained over two days in questionnaire administration, obtaining informed consent, managing participant confidentiality, and maintaining neutrality in qualitative interviews. Fieldwork was supervised daily by the principal researcher, with completed questionnaires reviewed for missing data and internal consistency at the end of each day. Audio recordings of in-depth interviews were reviewed within 24 hours of collection to identify any quality issues before transcription.

3.5 Research quality

3.5.1 Validity

Content validity was established through the instrument adaptation process and pretesting as described above. This study carefully designed and pre-tested data collection instruments grounded in established theoretical frameworks to accurately capture awareness, attitudes, and barriers related to NHIS. To ensure construct validity and cultural contextualisation for the Kampala informal sector population, each adapted item from comparable study tools was reviewed against the theoretical definition of its target construct to confirm conceptual alignment with Andersen's Behavioural Model and DOI Theory as specified in Chapter two. To address potential multicollinearity among the attitudinal and demographic predictor variables, Principal Component Analysis (PCA) was conducted prior to logistic regression.

3.5.2 Reliability

The attitudes towards NHIS and enrolment intention scales demonstrated good to excellent internal consistency ($\alpha = .822$ and $\alpha = .924$ respectively), supporting the use of composite scores for inferential analysis. The perceived barriers and communication preferences scales returned lower coefficients ($\alpha = .520$ and $\alpha = .328$ respectively), which is interpreted as reflecting the multidimensional and formative nature of these constructs rather than poor item quality; experiencing one type of barrier does not predict experiencing another, and preference for one communication channel does not predict preference for another (Tavakol & Dennick, 2011). In recognition of this, item-level rather than composite analyses were applied to these two scales (Bollen & Lennox, 1991).

3.6 Data analysis

3.6.1 Quantitative data

Quantitative data were analysed using STATA version 17.0. The analysis proceeded in three stages: descriptive, bivariate, and multivariate.

Descriptive analysis summarised the distribution of all study variables. Categorical variables (including sex, occupation type, education level, marital status, SACCO membership, current insurance status, and awareness of NHIS) were described using frequencies and percentages. Continuous variables (including age, household size, number of dependents, monthly income, distance to the nearest health facility, and healthcare utilisation frequency) were described using measures of central tendency and variability. Likert-scale items measuring attitudes, perceived barriers, and uptake intention were summarised using means and standard deviations. These descriptive findings established the profile of awareness, attitudes, and uptake intention among Kampala's informal sector workers prior to bivariate and multivariate modelling.

Bivariate analysis examined associations between socio-demographic, health-system, institutional, and social-system variables and the two outcome variables: intention to enrol in the NHIS and intention to encourage others to join, both of which served as proxies for uptake given that the scheme was not yet operational. Pearson chi-square tests assessed associations between categorical independent variables and uptake intention, dichotomised as likely versus unlikely to enrol; where expected cell counts fell below five, Monte Carlo simulation with 5,000 samples was used to estimate *p*-values without relying on the asymptotic chi-square approximation. Independent-samples *t*-tests compared mean attitude and intention scores between two groups (e.g., male versus female participants) on the dimensions for which composite scoring was justified by the reliability analysis. One-way ANOVA was used to compare mean intention scores across three or more groups, including the five Kampala administrative divisions, the six occupational categories, monthly income brackets, and education levels; where ANOVA results were significant, post-hoc tests identified the specific groups that differed.

Multivariate binary logistic regression was used to identify the independent predictors of enrolment intention. The outcome variable - intention to enrol in the proposed NHIS, was dichotomised as likely versus unlikely based on participants' responses to the enrolment intention items. To address multicollinearity among the attitudinal and demographic predictors, PCA was conducted on the standardised independent variables prior to regression. Attitudes towards the NHIS were entered into the regression model as independent predictor variables. While the conceptual framework positions them as theoretically antecedent to enrolment intention, in the regression model their independent contributions to intention were assessed after controlling simultaneously for all other predictors, using a forced entry method. A forced entry approach was adopted rather than stepwise selection because the regression was theory-

driven: all variables specified in the conceptual framework were entered simultaneously, and their individual contributions assessed within that theoretically specified model. Model fit was assessed using the McFadden's pseudo- R^2 and the likelihood ratio test.

Components were retained on the basis of the scree plot, the Kaiser eigenvalue-greater-than-one rule, and cumulative variance explained, and were labelled with reference to the variables loading most strongly on each. The retained components, together with the demographic variables of theoretical and policy relevance, were then entered into a multivariate logistic regression model to identify the independent predictors of intention to enrol, with all variables adjusted for simultaneously. Results were reported as adjusted odds ratios with 95% confidence intervals, and statistical significance was set at $p < .05$. Together, these analyses informed the policy recommendations developed in Chapter 5 on which barriers should be prioritised and which population subgroups require targeted strategies to ensure equitable inclusion in the NHIS.

3.6.2 Qualitative data

Qualitative data from the 15 in-depth interviews were analysed thematically following the six-step reflexive thematic analysis framework of Braun and Clarke (Braun & Clarke, 2006). The process began with data familiarisation through repeated reading of transcripts and noting of initial impressions, followed by systematic initial coding of recurring ideas and patterns across the dataset. Codes were then grouped into potential themes, which were reviewed for internal coherence and distinctiveness before being defined, named and labelled. The final step involved selecting illustrative verbatim excerpts to support and contextualise each theme in the written report. All coding and thematic development was conducted in NVivo 12. Qualitative findings were subsequently interpreted alongside the quantitative results to provide contextual depth and explanatory richness, consistent with the explanatory sequential mixed-methods design.

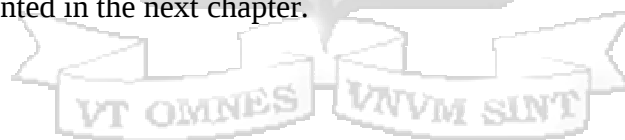
3.7 Ethical considerations

Ethical clearance was obtained from three bodies: Strathmore University Institutional Scientific and Ethics Review Committee (SU-ISERC), Kawempe National Hospital Research and Ethics Committee (KNHREC) and the Uganda National Council for Science and Technology (UNCST) to ensure compliance with institutional and national research standards. Before data collection began, administrative clearance was obtained from Kampala Capital City Authority (KCCA).

Participation was voluntary, with no penalties for non-participation. This was clearly explained to participants before obtaining their consent, alongside the purpose of the study, procedures, risks, and benefits. Informed consent forms were available in both English and Luganda, and each participant received compensation of UGX 5000 for potential income and time loss during the interview period. Confidentiality was maintained through use of unique participant codes for data linkage, secure password-protected storage of electronic data, and physical documents stored in locked cabinets with restricted access. Audio recordings were stored in password-protected files accessible only to the research team and were deleted upon completion of transcription.

3.8 Chapter summary

This chapter presented the study's methodology. A pragmatic philosophy and an explanatory sequential mixed-methods design were adopted, in which the quantitative phase was conducted first and its findings used to inform the subsequent qualitative phase. A sample of 384 informal sector workers was selected via multistage sampling across Kampala's five divisions, with 15 purposively selected participants drawn from within the survey sample for in-depth interviews. Data collection procedures, instruments, and quality controls were described for both the quantitative and qualitative components. Analytical strategies combined descriptive, bivariate, and multivariate analysis in STATA 17.0 with thematic analysis in NVivo 12, following Braun and Clarke (2006). Validity, reliability, and ethical considerations were addressed throughout. The findings are presented in the next chapter.



CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.0 Introduction

This chapter presents the descriptive and analytical results of the study, organised to address the five research questions.

4.1 Response rate

A total of 384 informal sector workers across Kampala's five completed the quantitative survey, yielding a response rate of 100%. While this rate is unusually high, it is attributable to on-site, face-to-face administration by trained research assistants, which structurally eliminated the non-response typical of self-administered surveys. Nevertheless, this administration modality introduces a risk of social desirability bias: participants approached in person may have provided more favourable responses than they would in an anonymous format (Nederhof, 1985). The 100% rate should therefore be understood as a feature of the data collection method rather than as evidence of uniform genuine enthusiasm, and its implications are noted as a limitation.

4.2 Socio-demographic profile of participants

Participants were mostly male (57.3%), clustered around young to middle adults (20–39 years, 70.4%; mode = 20–29 years, 38.0%), and underrepresented in the older adult age category (≥ 60 years, 1.3%). The majority of participants had secondary education (54.7%), followed by those with only a primary education (34.8%), with tertiary educated participants making up a small portion of the sample (8.8%), and 1.7% reported having no formal education. Just over half of participants were married (53.6%) and the next largest group identified as single (40.1%), with divorced, separated and widowed participants accounting for the remaining 6.3%. Most participants identified their religion within Christian denominations (Catholicism, 40.4% and Protestantism, 20.8%), with Muslims making up a substantial minority (14.8%).

Table 3: Sociodemographic characteristics of participants (N=384)

Characteristic	n (%)
Gender	
Male	220 (57.3%)
Female	164 (42.7%)
Age group (years)	
<20	25 (6.5%)
20-29	146 (38.0%)
30-39	124 (32.3%)
40-49	54 (14.1%)
50-59	30 (7.8%)
60-69	4 (1.0%)
70+	1 (0.3%)
Education level	
None	6 (1.7%)
Primary	123 (34.8%)
Secondary	193 (54.7%)
Tertiary/University	31 (8.8%)
Marital status	
Single	154 (40.1%)
Married	206 (53.6%)
Divorced	6 (1.6%)
Separated	12 (3.1%)
Widowed	6 (1.6%)
Religion	
Catholic	155 (40.4%)
Protestant	80 (20.8%)
Muslim	57 (14.8%)
Seventh Day Adventist	14 (3.6%)
Born Again	74 (19.3%)
None	4 (1.0%)

N=384. Source: Researcher (2026)

4.3 Socio-economic profile of participants

The profile presented by participants' socio-economic characteristics in Table 2 illustrates how those operating in Kampala's informal sector are predominantly financially independent but economically unstable. Of the participants, 61.5% reported being self-employed, with the largest segments of primary occupation being artisans (22.7%), boda-boda/taxi drivers and market vendors/street hawkers, 18.3% and 18.0%, respectively.

In terms of income, the sample displayed relatively high levels of income fragility; 30.5% of participants stated their monthly earnings fell between 100,001–300,000UGX while nearly a third (28.9%) of participants had unstable incomes that fluctuated significantly month-to-month making planned expenses difficult. Household sizes ranged widely from participants being the sole member supporting themselves to those supporting 8 or more relatives, with the majority supporting between 3–4 members (36.7%). Finally, participants exhibited low levels of integration with formal financial institutions, with 72.1% reporting no SACCO membership.

Table 4: Economic and occupational profile of participants (N=384)

Characteristic	n (%)
Employment type	
Self-employed	236 (61.5%)
Employed by someone	148 (38.5%)
Primary occupation	
Artisan	87 (22.7%)
Boda-boda/Taxi driver	70 (18.3%)
Market vendor/street hawker	69 (18.0%)
Service provider	61 (16.0%)
Shop proprietor	54 (14.1%)
Construction worker	43 (11.2%)
Other	0 (0.0%)
Monthly income	
100,001–300,000	117 (30.5%)
Income varies significantly	111 (28.9%)
300,001–500,000	65 (16.9%)
Less than 100,000	40 (10.4%)
500,001–1,000,000	30 (7.8%)
Prefer not to say	15 (3.9%)
Above 1,000,000	6 (1.6%)
Household size	
1-2	106 (27.6%)
3-4	141 (36.7%)
5-6	87 (22.7%)
7-8	33 (8.6%)
9+	17 (4.4%)
SACCO membership	
Yes	107 (27.9%)
No	277 (72.1%)

N=384. Source: Researcher, 2026

4.4 Internal consistency and reliability

4.4.1 Reliability analysis of the research instrument

Internal consistency reliability was assessed using Cronbach's alpha for the four Likert-scale domains of the questionnaire. The attitudes and enrolment intention scales demonstrated good to excellent reliability ($\alpha = .822$ and $\alpha = .924$ respectively), supporting the use of composite scores for inferential analysis involving these constructs. The perceived barriers scale ($\alpha = .520$) and communication preferences scale ($\alpha = .328$) returned values below the conventional threshold of .70.

Table 5: Internal consistency and reliability analysis

Scale	Number of Items	Cronbach's Alpha (α)	Interpretation
Attitudes towards NHIS	6	.822	Good
Perceived barriers to adoption	7	.520	Poor
Communication & information preferences	7	.328	Below threshold
Intention to adopt	2	.924	Excellent

Note. Reliability thresholds: $\alpha \geq .90$ Excellent; $.80-.89$ Good; $.70-.79$ Acceptable; $.60-.69$ Questionable; $< .60$ Poor/Unacceptable. Source: Primary Data, 2026.

4.4.2 Interpretation of low alpha coefficients and analytical approach

These low coefficients are interpreted with reference to the theoretical nature of each construct. Cronbach's alpha measures inter-item correlation and is sensitive to the dimensionality of the construct being measured (Taber, 2018; Tavakol & Dennick, 2011). Perceived barriers to NHIS uptake span financially, informationally, and structurally distinct sub-domains, and experiencing one type of barrier does not predict experiencing another. Similarly, communication channel preferences are formative indicators; preference for social media does not predict preference for radio or community meetings. For such constructs, item-level analysis is more appropriate than composite scoring (Bollen & Lennox, 1991).

Accordingly, composite score analyses were applied only to the attitudes and enrolment intention scales, while item-level analyses reporting individual item means, rankings, and Spearman correlations were conducted for the barriers and communication preferences scales. Findings from these scales are therefore item-specific: identifying which individual barriers are most salient and which channels are most preferred, rather than characterising an overall barrier burden or composite preference profile.

4.5 Level of awareness of the proposed NHIS

4.5.1 General awareness

Awareness of the proposed NHIS was strikingly low: only 54 participants (14.1%) reported having previously heard of the scheme, while 85.9% (n = 330) had no prior awareness. Among the 54 aware participants, the most common information sources were family and friends (n = 14, 25.9%), television (n = 13, 24.1%), and social media (n = 12, 22.2%), followed by radio (n = 9, 16.7%). Knowledge of the scheme's contribution structure was sparse: only 36 participants in the full sample (9.4%) knew the scheme would involve regular annual contributions, and even among the aware minority, only 6 (11.1%) had knowledge of the proposed annual premium, demonstrating a profound depth-of-knowledge deficit even among those who had heard of the scheme.

Table 6: General awareness of the proposed NHIS

Characteristic	Category	n (%)	N
Ever heard of NHIS	Yes	54 (14.1%)	384
	No	330 (85.9%)	384
Source of information	Radio	9 (16.7%)	54
	Television	13 (24.1%)	54
	Newspaper/print media	0 (0.0%)	54
	Social media	12 (22.2%)	54
	Health worker/facility	3 (5.6%)	54
	Friends/family	14 (25.9%)	54
	Gov't official	4 (7.4%)	54
	Other	4 (7.4%)	54
Knowledge of regular annual contributions	Yes	36 (9.4%)	384
	No	348 (90.6%)	384
Knowledge of annual premium among aware	Yes	6 (11.1%)	54
	No	48 (88.9%)	54

Note. Source: Primary Data, 2026.

4.5.2 Association between socio-demographic factors and awareness

Pearson's chi-square tests of independence were conducted to examine associations between socio-demographic characteristics and awareness of the proposed NHIS. Several cells were sparse, with expected frequencies of less than five which could have biased the results; therefore, Monte Carlo simulation with 5,000 samples was used to derive exact results. The Monte Carlo simulation with 5,000 samples was therefore used to derive exact p-values (Agresti, 2013;Hope, 1968).

The analysis revealed a statistically significant association between monthly income and NHIS awareness, $\chi^2(6, N = 384) = 19.97, p = .003$. The strength of this association, as measured by Cramer's V, was .228, indicating a moderate effect size. This suggests that levels of awareness are not uniformly distributed across income brackets; specifically, the data indicates that an individual's economic status may play a critical role in their access to or engagement with information regarding the scheme.

Participants' religious affiliation was also found to be associated with knowledge of the NHIS, $\chi^2(5, N = 384) = 12.93, p = .024$. The strength of the association between these variables was weak (Cramer's V = .183). While religion influences knowledge of the NHIS, other variables such as economic status play a stronger role. Age, household size, education level, marital status, primary occupation, and gender were not significantly associated with NHIS awareness.

Table 7: Factors associated with awareness of the proposed NHIS

Factor	Test used	Chi-square	df	p-value	Cramer's V
Monthly income	Chi-square with Monte Carlo p	19.968	6	0.005*	0.228
Religion	Chi-square with Monte Carlo p	12.93	5	0.0288*	0.183
Age group	Chi-square with Monte Carlo p	6.798	3	0.073	0.133
Household size	Pearson chi-square	4.459	3	0.216	0.108
Education level	Chi-square with Monte Carlo p	2.824	3	0.4107	0.089
Marital status	Chi-square with Monte Carlo p	2.682	4	0.6351	0.084
Primary occupation	Pearson chi-square	3.367	5	0.6436	0.094
Gender	Pearson chi-square	0.182	1	0.6697	0.022

Note. * $p < .05$. Asterisks denote statistical significance. Source: Primary Data, 2026.

4.6 Attitudes towards the proposed NHIS

Attitudes towards the proposed NHIS were measured using six items rated on a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*). With a consistent sample size of $N = 384$ for all six items, higher mean scores were interpreted as an indicator of greater institutional support or positive sentiment toward the NHIS. This quantitative approach provided a measurable foundation for the participants' subjective views.

Acceptability of the NHIS was generally positive with some reservations. The overall mean attitude score was 3.58 ± 0.65 out of a possible 5 indicating cautious optimism about the proposed scheme. Most people's expectations about NHIS were related to instrumental benefits. Participants were most positive about NHIS being beneficial for informal workers specifically ($M = 3.77$, $SD = 0.80$) and about its potential to improve family healthcare access ($M = 3.72$, $SD = 0.81$). The results show that fundamentally people view NHIS as something that can provide solutions to some of the present challenges with receiving and paying for health care. There was, however, a clear gap on questions about how the scheme would be managed. Though citizens were hopeful about the medical benefits, confidence in government management of the scheme was lower ($M = 3.44$, $SD = 0.91$).

Participants were also evenly split on whether the UGX 100,000 annual fee was affordable. The question on annual membership fees had the largest disagreement among participants ($M = 3.34$, $SD = 1.19$). While most participants thought the fees were affordable, there was a large minority who did not (27.1%). For many families, the up-front cost of participating remained a barrier.

Table 8: Scores of attitudes towards the proposed NHIS

Detailed questions about attitude	Categories	N	%	M ± SD
NHIS will reduce my overall healthcare expenses	Strongly disagree	9	2.3	3.67 ± 0.79
	Disagree	17	4.4	
	Neutral	97	25.3	
	Agree	229	59.6	
	Strongly agree	32	8.3	
NHIS will help me and my family access better healthcare	Strongly disagree	10	2.6	3.72 ± 0.81
	Disagree	15	3.9	
	Neutral	87	22.7	
	Agree	231	60.2	
	Strongly agree	41	10.7	
I trust the government to manage NHIS fairly and transparently	Strongly disagree	13	3.4	3.44 ± 0.91
	Disagree	39	10.2	
	Neutral	133	34.6	
	Agree	165	43	
	Strongly agree	34	8.9	
NHIS will be beneficial for informal workers like me	Strongly disagree	8	2.1	3.77 ± 0.8
	Disagree	16	4.2	
	Neutral	80	20.8	
	Agree	233	60.7	
	Strongly agree	47	12.2	
The benefit of NHIS outweighs the cost	Strongly disagree	9	2.3	3.52 ± 0.81
	Disagree	15	3.9	
	Neutral	165	43	
	Agree	158	41.1	
	Strongly agree	37	9.6	
The proposed annual contribution of UGX 100,000 is affordable for me	Strongly disagree	39	10.2	3.34 ± 1.19
	Disagree	65	16.9	
	Neutral	52	13.5	
	Agree	182	47.4	
	Strongly agree	46	12	

4.6.1 Gender differences in attitudes towards NHIS

Independent samples t-tests were conducted to examine gender differences across the six attitudinal items. No significant gender differences were observed between participants' perceptions of whether NHIS will reduce health costs ($p = .531$), provide improved access to quality healthcare ($p = .873$), or receive benefits from NHIS that are worth the cost of contributing to it ($p = .617$), as evidenced by confidence intervals that include zero. However, significant gender differences were found in participants' trust in the government to run NHIS efficiently ($p = .047$, 95% CI [-0.35, -0.01]), with men more likely to distrust the government's management of the scheme compared to their female counterparts. Significant gender differences were also noticed in terms of affordability of the UGX 100,000 premium fee ($p = .001$, 95% CI [0.16, 0.64]). Male participants were significantly more likely to view the contribution fee as affordable than their female counterparts.

Table 9: Independent sample T-test comparing attitudes towards the proposed NHIS by gender (N=384)

Variable	Gender	M(SD)	t	p	95% CI [Lower, Upper]
Reduce healthcare expenses	Male	3.65 (0.77)	-0.63	0.531	[-0.21, 0.11]
	Female	3.70 (0.81)			
Access better healthcare	Male	3.72 (0.77)	-0.16	0.873	[-0.17, 0.15]
	Female	3.73 (0.86)			
Trust govt. to manage fairly	Male	3.36 (0.95)	-1.99	0.047*	[-0.35, -0.01]
	Female	3.54 (0.85)			
Beneficial for informal workers	Male	3.74 (0.76)	-0.77	0.443	[-0.22, 0.10]
	Female	3.80 (0.84)			
Benefit outweighs cost	Male	3.50 (0.78)	-0.5	0.617	[-0.20, 0.12]
	Female	3.54 (0.86)			
UGX 100,000 is affordable	Male	3.51 (1.10)	3.27	0.001*	[0.16, 0.64]
	Female	3.11 (1.27)			

4.7 Perceived barriers to NHIS uptake

4.7.1 Ranking of perceived barriers

Participants rated seven barrier factors on a 5-point Likert scale. The greatest perceived barrier to enrolment was lack of sufficient information about the scheme ($M = 3.45$, $SD = 0.84$). This was closely followed by health workers attitude ($M = 3.38$, $SD = 1.42$) and irregular income ($M = 3.26$, $SD = 1.22$). These three barriers scored above the neutral point of 3.0 indicating meaningful agreement that they are barriers to enrolment in the NHIS. Religious or cultural beliefs were ranked as the least NHIS enrolment barrier ($M = 2.29$, $SD = 1.33$), falling below the neutral point and indicating general disagreement with this as a meaningful constraint.

Table 10: Ranking of perceived barriers to the proposed NHIS uptake among participants (N=384)

Rank	Barrier (Likert Scale Item)	M	SD
1	Lack of sufficient information about NHIS	3.45	0.84
2	Poor attitudes of health workers in facilities	3.38	1.42
3	Irregular income makes it difficult to contribute	3.26	1.22
4	Concern that NHIS may not cover required services	3.05	0.8
5	Perceived difficulty in registration or access	2.96	0.82
6	Contribution of UGX 100,000 is too expensive	2.85	1.39
7	Religious or cultural beliefs discouraging enrolment	2.29	1.33

4.7.2 Correlation of perceived barriers

A Spearman's rank correlation analysis was conducted to explore the relationships between perceived barriers and NHIS enrolment. The strongest association was observed between the perception of the UGX 100,000 contribution as expensive and the irregularity of participants' income ($\rho = 0.51$, $p < .001$), highlighting how financial challenges are intensified by the unpredictable earnings common in the informal sector. Additionally, difficulties with registration were positively correlated with both cost ($\rho = .23$, $p < .001$) and irregular income ($\rho = .25$, $p < .001$). Negative attitudes of healthcare workers showed no significant correlation with the perceived cost of the scheme ($p = .773$), suggesting these barriers operate independently and therefore require distinct policy approaches for effective resolution.

Table 11: Correlation of perceived barriers

Relationship Strength	Variables	ρ	p -value
Moderate Positive	Cost ↔ Irregular Income	0.506	< 0.001
Weak Positive	Irregular Income ↔ Info Gap	0.249	< 0.001
	Irregular Income ↔ Registration Difficulty	0.248	< 0.001
	Cost ↔ Registration Difficulty	0.227	< 0.001
Non-Significant	Cost ↔ Health Worker Attitudes	0.015	0.773
	Info Gap ↔ Registration Difficulty	0.098	0.054

4.8 Communication channels and trusted information sources

4.8.1 Preferred channel for receiving NHIS information

Figure 2 shows participants' preferred channels for receiving information about the NHIS. Social media campaigns were the most-endorsed option at 61.98% ($n = 238$), followed by television broadcasts (53.65%) and radio programs (approximately 41.0%). Text messages

were favoured by roughly one-third of respondents, suggesting an appetite for direct, individually addressable communication alongside broadcast formats. Community-anchored channels ranked considerably lower: local council leaders attracted 9.90% support, and SACCO meetings registered as a similarly minor preference. These findings suggest a divergence between trust and information-seeking behavior; although local figures retain a recognised role in enrolment and validation, informal workers clearly prefer initial awareness messaging to reach them through mass media and digital platforms.

Together, the data indicate that an effective NHIS communication strategy should anchor first-contact awareness in broadcast and digital channels, while reserving interpersonal and community structures for the trust-building and enrolment phases rather than first-contact outreach. These preferred-channel figures should be distinguished from the smaller proportions reporting these same channels as the source through which they first became aware of NHIS (Section 4.5.1); the difference reflects what participants prefer for future outreach rather than what reached the small minority who had heard of the scheme.

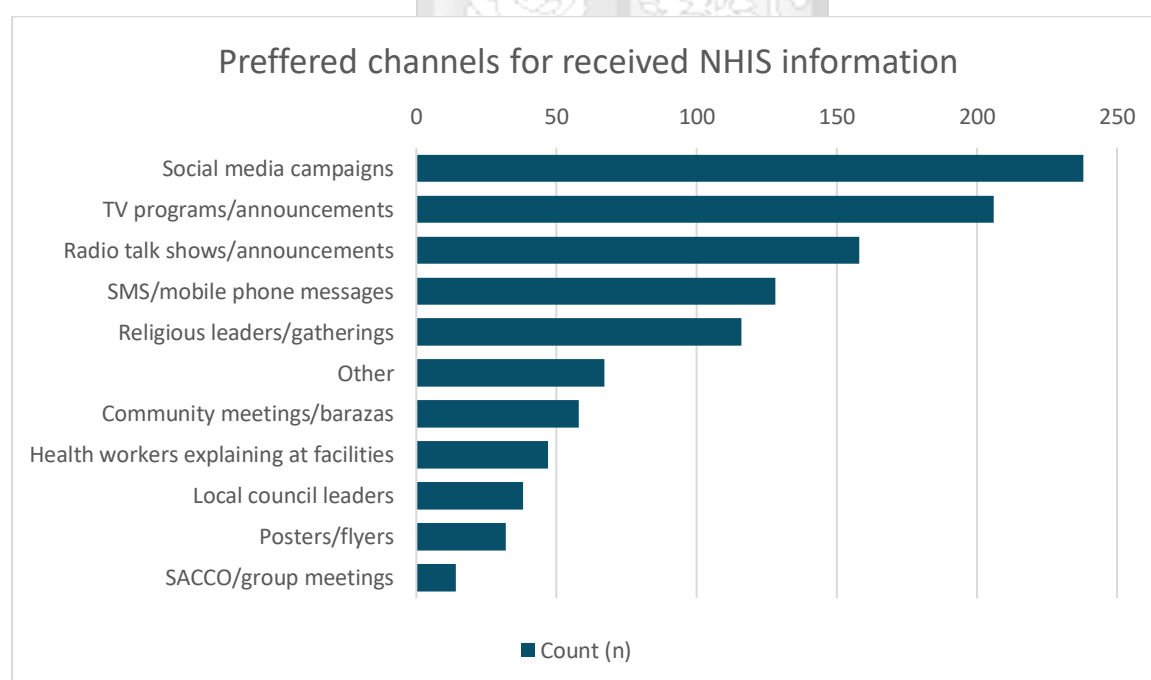


Figure 2: Bar graph showing the preferred channels for receiving NHIS information

4.8.2 Most trusted sources of information

Participants rated trust across six primary information channels, including radio, television, newspapers, social media, health workers, and religious leaders, using a standard five-point Likert scale. Shapiro-Wilk testing confirmed these data were not normally distributed,

therefore, non-parametric procedures were necessary. We conducted a Friedman test to evaluate significant differences among sources while reporting Kendall's W as the effect size.

Table 12 displays descriptive statistics regarding our six sources with ($N=384$). Religious leaders topped the list at ($M = 4.08$, $SD = 0.87$). Social media followed closely behind with ($M = 4.02$, $SD = 1.02$), while health workers held steady at ($M = 3.82$, $SD = 1.01$). Together, these channels form our high-trust cluster. They dominate the data with over 70 percent of surveyed respondents indicating that they trusted these channels. Television secured the fourth spot ($M = 3.69$, $SD = 0.95$), but radio trailed with much wider variance ($M = 3.21$, $SD = 1.23$). Newspapers hit the bottom ($M = 2.48$, $SD = 1.00$), with responses suggesting that they failed to earn public confidence. Nearly 60% of respondents claimed they distrusted print media entirely. This pattern is consistent with declining print readership in Kampala's informal sector, where exposure to physical newspapers is limited and the credibility of print as a source of health information has eroded.

Table 12: Descriptive statistics for trust in information sources ($N=384$)

Source	M	SD	Median	IQR	Rank
Religious leaders	4.08	0.87	4.0	[4.0, 5.0]	1
Social media	4.02	1.02	4.0	[4.0, 5.0]	2
Health workers	3.82	1.01	4.0	[3.0, 4.0]	3
Television	3.69	0.95	4.0	[3.0, 4.0]	4
Radio	3.21	1.23	3.0	[2.0, 4.0]	5
Newspapers	2.48	1.00	2.0	[2.0, 3.0]	6

4.9 Intention to enrol

4.9.1 Bivariate analysis: Factors associated with intention to enrol

Chi-square tests of independence were conducted to examine associations between socio-demographic variables and enrolment intent (dichotomised as 'likely' vs. 'unlikely'). As observed in the last column of

Table 13, Education Level ($\chi^2 = 7.99$, $p = .046$) and general awareness ($\chi^2 = 5.64$, $p = .036$) were the only variables significantly associated with intention to enrol. Participants with higher levels of education were significantly more likely to indicate intent to enrol in the NHIS. Participants' intent on enrolling in the NHIS increased from 50% of participants with no formal education to 83.9% of participants with tertiary education. Perhaps this relationship can be explained by higher education participants having higher health literacy or better understanding

of insurance in general. Intent to enrol was also significantly related to whether or not the participant had heard of the NHIS before the study. Of participants that had heard of the NHIS, 88.9% responded that they intended to enrol in the scheme compared to 74.8% of participants that had not heard of NHIS. Occupation and gender showed relatively high chi-square values but neither reached significance.

Table 13: Bivariate analysis of factors associated with intention to enrol in the proposed NHIS (N=384)

Variable	Likely n (%)	Unlikely n (%)	Chi-Square (χ^2), <i>p</i> -value
Gender			3.35, .067
Female	118 (72.0%)	46 (28.0%)	
Male	177 (80.5%)	43 (19.5%)	
Education Level			7.99, .046*
None	3 (50.0%)	3 (50.0%)	
Primary	85 (69.1%)	38 (30.9%)	
Secondary	154 (79.8%)	39 (20.2%)	
Tertiary	26 (83.9%)	5 (16.1%)	
Occupation			10.42, .064
Artisan	70 (80.5%)	17 (19.5%)	
Boda-boda/Taxi driver	60 (85.7%)	10 (14.3%)	
Construction worker	30 (69.8%)	13 (30.2%)	
Market vendor/Hawker	45 (65.2%)	24 (34.8%)	
Service provider	47 (77.0%)	14 (23.0%)	
Shop proprietor	43 (79.6%)	11 (20.4%)	
SACCO Membership			2.89, .089
No	206 (74.4%)	71 (25.6%)	
Yes	89 (83.2%)	18 (16.8%)	
General Awareness			5.64, .036*
Aware	48 (88.9%)	6 (11.1%)	
Not Aware	247 (74.8%)	83 (25.2%)	

Note. N=384. Percentages are row-wise. Asterisks (*) and bolded *p*-values denote statistical significance at the $p < .05$ level.

4.9.2 Bivariate analysis: Intention to enrol by geographical location

Chi-square tests revealed a significant association between Kampala division and intention to enrol ($\chi^2 = 30.52$, $p < .001$). Enrolment intent varied markedly across divisions: 98.7% of participants from Rubaga Division indicated likely enrolment, compared with only 63.6% from Central Division. While low cell counts in the 'unlikely' column for Rubaga warrant caution in

over-interpretation, the geographic variation indicates that location-specific factors such as community trust networks, proximity to health facilities, and local information channels, shape enrolment readiness independently of individual socio-demographic characteristics. This finding has direct implications for the equitable inclusion outcome.

Table 14: Bivariate analysis of intention to enrol in the proposed NHIS by location (N=384)

Variable	Likely n (%)	Unlikely n (%)	Chi-Square (χ^2), p-value
Location (Division)			30.52, .000***
Central	49 (63.6%)	28 (36.4%)	
Kawempe	57 (74.0%)	20 (26.0%)	
Makindye	59 (77.6%)	17 (22.4%)	
Nakawa	54 (70.1%)	23 (29.9%)	
Rubaga	76 (98.7%)	1 (1.3%)	

4.9.3 Bivariate analysis: Factors associated with intention to encourage others to enrol

Analysis of participants' likelihood of recommending NHIS to family and friends revealed that only general NHIS awareness was significantly associated with social advocacy intent ($\chi^2 = 8.64$, $p = .003$). Participants who were aware of the proposed NHIS were significantly more likely to recommend it to family and friends (92.6%) than those who were not aware (73.0%). Education level approached significance ($\chi^2 = 6.72$, $p = .082$) with tertiary-educated participants showing the highest recommendation intent (87.1%). Gender, occupation, and SACCO membership were not significantly associated with social advocacy, suggesting that once basic information about the scheme is established, the impulse to recommend it transcends socio-economic boundaries.

Table 15: Bivariate analysis of factors associated with intention to encourage others to enrol in the proposed NHIS (N=384)

Variable	Likely n (%)	Unlikely n (%)	Chi-Square (χ^2), p-value
Gender			1.94, .164
Female	118 (72.0%)	46 (28.0%)	
Male	173 (78.6%)	47 (21.4%)	
Education Level			6.72, .082
None	4 (66.7%)	2 (33.3%)	
Primary	83 (67.5%)	40 (32.5%)	
Secondary	149 (77.2%)	44 (22.8%)	
Tertiary	27 (87.1%)	4 (12.9%)	
Occupation			4.38, .496
Artisan	70 (80.5%)	17 (19.5%)	
Boda-boda/Taxi driver	56 (80.0%)	14 (20.0%)	
Construction worker	31 (72.1%)	12 (27.9%)	
Market vendor/Hawker	47 (68.1%)	22 (31.9%)	
Service provider	47 (77.0%)	14 (23.0%)	
Shop proprietor	40 (74.1%)	11 (25.9%)	
SACCO Membership			2.07, .150
No	204 (73.6%)	73 (26.4%)	
Yes	87 (81.3%)	20 (18.7%)	
General Awareness			8.64, .003**
Aware	50 (92.6%)	4 (7.4%)	
Not Aware	241 (73.0%)	89 (27.0%)	

4.9.4 Multivariate logistic regression

4.9.4.1 Principal Component Analysis (PCA) for dimensionality reduction

Principal Component Analysis (PCA) was used to identify the predictor variables that best explained intention to enrol prior to multiple logistic regression analysis. Principal components were extracted after standardising the predictor variables, to capture the largest amount of variance in the dataset. PCA reduces the number of dimensions used to predict the outcome without sacrificing model performance and improves model fit in high dimensional health data (Sabharwal & Anjum, 2016). PCA results were reported using a scree plot and component loadings in line with best scientific practice guidelines (Cozzolino, Power, & Chapman, 2019).

The scree plot depicts the amount of variance explained by each component. The first principal component (PC1) accounted for the largest percentage of variance followed by the second principal component (PC2) as the second biggest peak. At PC2, the curve showed an elbow, after which the slope flattened. This means that PCs 1 and PC2 therefore accounted for the largest underlying structure and were kept while the remaining components were discarded. The first two PCs account for an adequate amount of the cumulative percent of variance.

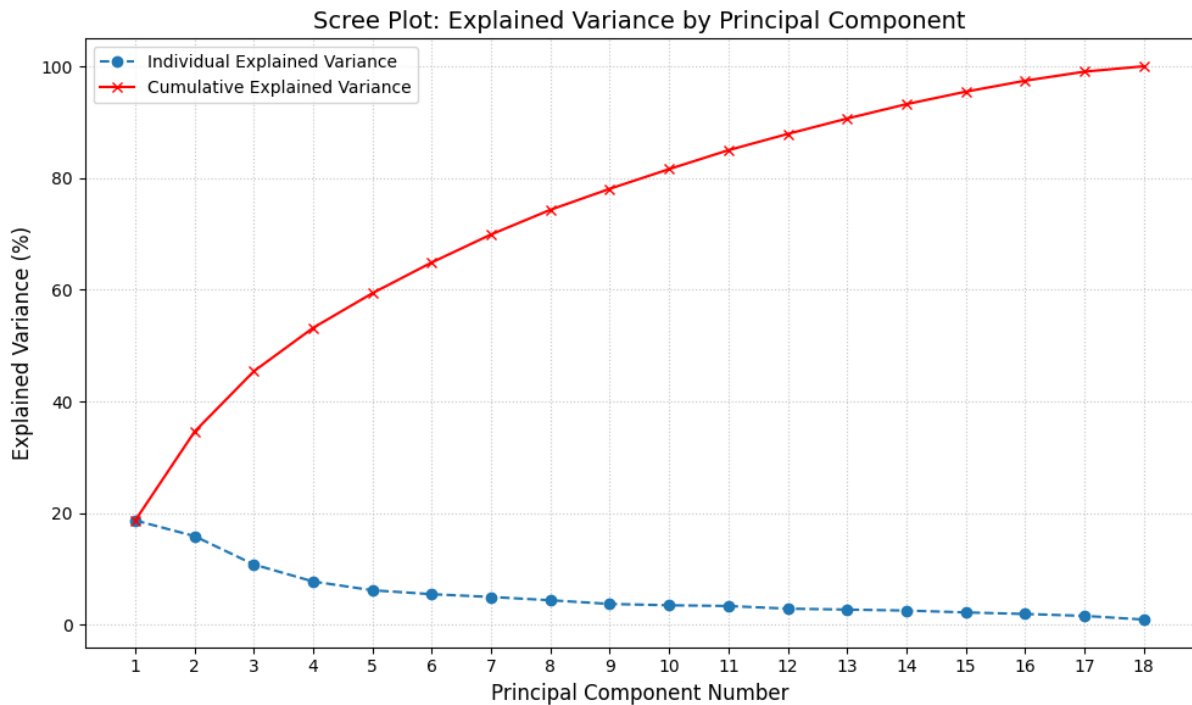


Figure 3: Scree plot – Explained variance by Principal Component

Two components of PCA were able to explain the concerns about insurance of informal sector workers in Kampala with eigenvalues greater than 1. As reflected in *Table 16* below, PC1 was weighted most heavily by household size (0.357), number of times households visit health facilities (0.357), number of dependents in household (0.332) and age of participant (0.320) therefore it was named '*Health Vulnerability and Dependency*'. PC2 was weighted most heavily by belief that NHIS would afford households easier access to health care (0.459), reduce healthcare expenses (0.443), perceived government trustworthiness (0.393) and net benefit perception (0.391), and was named the '*Perceptual and Attitudinal factor*'. Variables such as sex (0.061) and level of education (0.053) had low factor loadings on both components.

Table 16: Principal component loadings for enrolment drivers (N=384)

Variable	PC1 (Health & Demographics)	PC2 (Attitude Factors)
Household Size	0.357	-0.138
Visits to Health Facility (12 Months)	0.357	-0.192
Number of Dependents	0.332	-0.221
Age	0.32	-0.137
Sick Last Month	0.283	-0.131
Chronic Illness	0.277	-0.147
Income	0.261	0.012
Difficulty Paying Healthcare	0.253	-0.111
Health Status	-0.183	0.099
Member of SACCO	0.171	0.046
Distance to Health Facility	0.118	-0.041
Sex	0.061	-0.012
Education Level	0.053	0.154
NHIS will help me access better health care	0.224	0.459
NHIS will reduce my overall health expenses	0.227	0.443
Trust the gov't to manage the NHIS transparently	0.092	0.393
The benefit of NHIS outweighs the cost	0.176	0.391
Annual contribution of 100,000 UGX affordable to me	0.139	0.272

Note. Bold values with asterisks (*) indicate highest-loading variables within each component. Source: Primary Data, 2026.

4.9.4.2 Multivariate logistic regression results

Multivariate logistic regression analysis was conducted to identify the strongest independent predictors of enrolment intent after controlling for all socio-demographic variables and attitudinal beliefs about the scheme. The model was statistically significant ($\chi^2 (8) = 99.56, p < .001$), indicating that the variables significantly predicted intention to enrol, and it accounted for roughly 24% of the variance in intent to enrol (Pseudo $R^2 = .24$). Contrary to initial expectations, none of the socio-demographic variables including age, household size, healthcare utilization or number of dependents significantly predicted enrolment intent. Enrolment intent was determined overwhelmingly by attitudinal and perceptual factors.

Individuals who believed that the benefits of the proposed NHIS outweighed the associated costs were nearly three times more likely to express intent to enrol compared to those who disagreed with this statement ($OR = 2.85, p < .001$). Those who believed NHIS would reduce their overall healthcare expenses were more than twice as likely to intend to enrol than their counterparts who disagreed with this statement ($OR = 2.29, p = .007$). Finally, individuals who

trusted the government to manage the scheme honestly were 57% more likely to intend to enrol ($OR = 1.57, p = .024$). Although number of dependents was marginally significant ($p = .060$), the overall results firmly establish that enrolment intent is driven by perceived economic utility and institutional trust rather than perceived need among the informal sector workers in Kampala.

Table 17: Multivariate logistic regression of factors predicting proposed NHIS Enrolment Intent (N=384)

Predictor	Odds Ratio (OR)	95% CI	p-value
Socio-Demographic Factors			
Household size	0.92	[0.79, 1.06]	0.244
Hospital visits (12 Months)	0.92	[0.64, 1.32]	0.643
Number of dependents	1.16	[0.99, 1.35]	0.06
Age	1	[0.97, 1.03]	0.869
Attitudinal Factors			
Access to better healthcare	0.96	[0.52, 1.77]	0.886
Reduction in health expenses	2.29	[1.26, 4.16]	.007**
Benefits outweigh costs	2.85	[1.72, 4.72]	<.001***
Trust in Govt. transparency	1.57	[1.06, 2.32]	.024*

Note. N = 384. Model $\chi^2(8) = 99.56, p < .001$; Pseudo R^2 (McFadden) = .239; Log-Likelihood = -158.12. OR = Odds Ratio; CI = Confidence Interval. Significance levels: * $p < .05$, ** $p < .01$, *** $p < .001$.

4.10 Qualitative research findings

4.10.1 Participant demographics

Fifteen participants were purposively selected for the qualitative component from within the main study sample, representing a range of informal sector experiences across all five Kampala divisions. Ages ranged from 24 to 58 years; ten were male and five were female. Participants were drawn from transport (boda-boda and taxi drivers), construction, artisanal trades, market vending, hawking, service provision, and shop proprietorship. These occupations were selected to obtain a sample of informal sector workers who had a range of income security and job risk. Education level of participants ranged from secondary school completion to university graduates, but most participants completed education at a secondary level. Gender and ages of participants were also taken into consideration when selecting participants to provide a diverse sample across socio-economic status, educational background, and male and female health-seeking behaviour.

4.10.2 Overview of thematic framework

Thematic analysis produced four overarching themes that situate the discussion of enrolment in the lived reality of social trust, economic inclusivity, fiduciary accountability, and service delivery quality.

Table 18: Thematic framework of enrolment drivers and barriers of the proposed NHIS

Main Theme	Sub-Themes	Key Qualitative Narrative
Theme 1: The Awareness–Information Paradox	Information Gap (n=3); Community-Based Outreach (n=4)	Disconnect between scheme existence and community knowledge; strong preference for door-to-door LC-led sensitisation.
Theme 2: Economic Fragility and Financial Barriers	Affordability Concerns (n=8); The 100k Premium (n=5); Preference for Instalments (n=5)	Clash between irregular daily earnings and fixed annual costs; instalment payments identified as a key facilitator.
Theme 3: The Governance Trust Deficit	Distrust in Management (n=4); 'Wait-and-See' Approach (n=3); Need for Honesty (n=5)	Trust as the social currency of the scheme; deep scepticism regarding corruption and mismanagement of public funds.
Theme 4: Service Delivery Expectations and Quality of Care	Chronic Drug Shortages (n=6); Staffing and Congestion (n=4)	Insurance perceived as worthwhile only if it guarantees drug availability and reduces waiting time.

Note. *n* values represent number of participants who raised that sub-theme. Source: Primary Data, 2026.

4.10.2.1 Theme 1: The Awareness-Information Paradox

This theme captures the substantial gap between the existence of the proposed NHIS and the informal sector workers' knowledge of it. The majority of participants reported encountering the scheme for the first time during the study itself, corroborating the quantitative finding that only 14.1% of the survey sample (*n* = 54) had prior awareness of the NHIS. This gap was not simply a function of educational attainment or media access: even a university-educated boda-boda rider (IA-009) who was broadly conversant with health financing concepts acknowledged that community-level awareness remained critically low.

IA-150: "The information gap... many people don't know about it, especially in the rural areas and those people that are in the informal sector, and surprisingly even people in the formal sector may not be knowing about it."

The sub-theme of community-based outreach emerged consistently as the preferred remedy. Four participants specifically cited the Local Council (LC) system as the most trusted and practically accessible channel for sensitisation, contrasting it favourably with radio, television, and social media on the grounds that LC structures can penetrate every household regardless of income, literacy, or digital access.

IA-093: *"They should do door-to-door sanitization like in previous elections, because if you consider Radio some people don't listen to radio, not everyone has a smart phone, but the best way to do that is through the local council. Because LCs can access everyone."*

IA-001: *"They should reach out down to the village level and do thorough sensitization, one-on-one like you're doing now. Someone will come to understand the importance, the advantage of enrolling into the system. But if you don't do that it will just be passing air."*

A secondary sub-theme was the financial literacy dimension of sensitisation. Several participants argued that awareness campaigns should not merely inform people that the NHIS exists but should actively demonstrate the financial logic of enrolment by comparing what informal workers currently spend on out-of-pocket treatment against the UGX 100,000 annual premium.

IA-001: *"When you reach down there you even calculate for them: 'you see, if you're not enrolled here, this is what you can spend per year on treatment. But given that you have enrolled, you're going to receive free service, at any time you feel like you want.'"*

This theme converges with and explains the quantitative finding that NHIS awareness was the variable with the lowest mean score among the attitudinal constructs ($M = 2.14$, $SD = 0.94$), while simultaneously being the area where participants most clearly articulated a pathway to change. The implication is that awareness is not a fixed structural barrier but a modifiable determinant that responds to targeted, community-rooted, and financially grounded communication.

4.10.2.2 Theme 2: Economic Fragility and Financial Barriers

This addresses the pocketbook realities of informal sector life and their structural incompatibility with the fixed annual premium model proposed for the NHIS. Eight of fifteen respondents raised affordability concerns either spontaneously or early in the interview, making this the most frequently coded sub-theme across the dataset. Importantly, the nature of the barrier was more nuanced than simple inability to pay: for several participants, the objection was not that UGX 100,000 was an unaffordable annual sum but that it was structurally incompatible with the irregular, day-to-day cash flows of informal work.

SK-062: *"First of all, limited funds, no money to go for insurance. Then secondly, limited trust though it's government. And then, being that it's something new, so the community adopting to something new is a bit tricky so it will require a lot of education."*

The 100,000 annual premium was assessed differently depending on income stability. A street hawker (IA-132) earning between UGX 300,000 and 500,000 per month observed that the sum was objectively manageable within those earnings but the actual barrier was liquidity timing, not annual cost.

IA-132: *"Like here where I am, in a month I get like 300k-500k. So 100k is affordable, I feel the people can afford to pay and join."*

This distinction of liquidity timing versus annual cost is analytically important for policy design. It directly explains the quantitative finding that irregular income ($M = 3.26$) ranked third among perceived barriers, and it maps onto the sub-theme of instalment payment preferences, which was raised by five participants independently and without prompting.

IA-150: *"If government could allow payment in instalment until one makes 100k for the whole year that can at least help to ensure that people can pay. And if they bring the mobile money, it will be easier for everyone now. Because at least everyone is registered with mobile money, so if they say at least in a month pay 5k or 10k then it will work."*

IA-003: *"When you say you can get in instalment, it will be easy for someone to say that maybe this week I put there my 5k and next week I get another 5k with time I will be done with the money."*

OA-107: *"It will be better to pay in instalment, as one can manage."*

The convergence of five independent participants spanning boda-boda riders, construction workers, and artisans on weekly or monthly micro-contributions as a solution suggests this is not an idiosyncratic preference but a structural feature of informal sector economics. The proposal directly mirrors the logic of informal savings clubs such as SACCOs that already operate widely within Kampala's informal sector, suggesting that instalment-based premium payment may represent not an innovation but an adaptation of an already-familiar financial behaviour

4.10.2.3 Theme 3: The Governance Trust Deficit

Institutional trust emerged as the social currency of the proposed NHIS. Four of fifteen participants expressed explicit and strong distrust of the government's capacity to administer the scheme fairly and transparently, citing prior experiences of corruption, fund mismanagement, and broken public commitments as the evidentiary basis for their scepticism. This qualitative pattern directly contextualises the multivariate regression finding that institutional trust (OR = 1.57, 95% CI [1.06, 2.32], $p = .024$) was a significant and independent predictor of enrolment intention.

SK-062: *"To be sincere I don't trust the government, reason being; government officials are too corrupt, they'll mismanage the scheme."*

IA-150: *"We don't trust that the government will do it because we have seen many programs that came and they talk and talk, and you think this time we have landed in Canada. But at the end of the day, you be Libya or Somalis — no step forward but rather going backward with the program."*

A recurring response to this distrust was not outright rejection of the NHIS but a 'wait-and-see' attitude that deferred commitment until tangible evidence of functioning benefits was observed from early adopters. Three participants articulated this logic independently, revealing a rational, evidence-seeking mechanism for managing the risk of investing in a new government programme.

SK-062: *"I will first wait for some people to join the scheme, then I see the benefits they have received then I will also join. You have to invest wisely, be sure where you put your money is going to work. Once upon a time a Red Cross came and said donate blood and when you need blood at the hospital, we'll give it to you for free. We donated. Only for three years to pass, my mother fell sick, I took her to the hospital, they wanted to add more blood but they didn't and they told me to buy blood from a different hospital yet I was a blood donor. Does it make sense? It doesn't!"*

IA-052: *"Experience from others who have been there first will motivate others to join. But if I am disappointed, don't expect more people."*

The conditions under which trust could be built or restored were explicitly articulated by several participants. Honesty and follow-through not merely adequate resourcing were identified as the preconditions for enrolment. Participants who expressed conditional rather

than absolute distrust framed their willingness to enrol in terms of whether the government would keep its promises, particularly regarding the availability of drugs and the absence of informal payments upon presenting an insurance card.

IA-110: "It goes back to honesty... not just saying bring money and when I reach there the services are not there. But if you keep your promise and the services are given, of course it will work."

Health workers were identified by several participants as a specific vulnerability point within the trust architecture of the scheme. Even among those who expressed conditional confidence in the government's intentions, concerns were raised that frontline health workers who are facing delayed salaries, inadequate supplies, and challenging working conditions would continue to solicit informal payments despite the insurance card, thereby undermining the scheme's core value proposition for its intended beneficiaries.

IA-093: "They can make you buy the medicine which you were not supposed to buy, they can begin referring you to outside clinics which belong to their friends, they can also ask for 'Kintu Kidogo,' which I also don't blame them, but the government should first work on that, it will make the scheme transparent."

This sub-theme introduces a key nuance: scepticism about the NHIS does not necessarily reflect opposition to the concept of social health insurance per se. Rather, it reflects a rational extrapolation from observed patterns in existing public health services, where structural incentives and resource constraints have systematically led to practices that erode the value of free or subsidised care. Rebuilding trust therefore requires not just transparent communication but credible, visible changes in health worker conditions and health facility functionality prior to the scheme's launch.

4.10.2.4 Theme 4: Service Delivery Expectations and Quality of Care

The fourth theme reflects participants' insistence that financial protection through insurance is only meaningful if it delivers access to quality, adequately resourced health services. The anticipated value of the NHIS card was consistently evaluated against a backdrop of known deficiencies in public health facilities especially chronic drug shortages and congestion which participants considered the primary threat to the scheme's practical utility.

Chronic drug shortages were raised by six of fifteen participants as the foremost concern about NHIS implementation, spanning across occupation categories and both genders. The concern

was not that drugs would be unaffordable under the scheme but that the existing structural failure of the public drug supply chain would render the insurance card valueless at the point of service.

IA-132: "Workers are available, equipment are available, and drugs are not available. You're sent to the pharmacy to buy drugs then come back for treatment."

IA-001: "There's no medicine. Even when you need some medicine there, they'll ask you to go to the private wing to buy it. Now this is a story where you have your card, you're supposed to get medicine; who's going to buy that medicine?"

IA-093: "You reach in the hospital you're told to go to another clinic to buy drugs yet your person is dying, this makes someone go to private even if they had wanted to go to a government facility because of the past experiences."

Staffing capacity and facility congestion were raised as secondary but related concerns by four participants, who worried that universal enrolment without commensurate investment in health worker numbers and physical infrastructure would replicate or exacerbate the congestion already experienced at public facilities.

IA-052: "I always find congestion in the hospitals. I think it is lack of adequate space and technical people. And medicine is also inadequate, they refer people elsewhere."

IA-002: "For the doctors and nurses they can be ready, but equipment and medicine will still be a problem."

Themes 3 and 4 converge on a single, policy-critical finding: for informal sector workers, the decision to enrol is not primarily a function of premium affordability but of confidence that the system will function as promised. Trust in governance (Theme 3) and confidence in service quality (Theme 4) are not alternative drivers of enrolment intent but co-conditions: participants who expressed willingness to join almost universally anchored that willingness to both honest administration and reliable drug and staffing availability. This convergence has direct implications for the sequencing of NHIS implementation; supply-side readiness must demonstrably precede demand-side enrolment campaigns.

4.11 Chapter summary

This chapter presented the study's findings. Awareness of the proposed NHIS was low at 14.1%, with depth of knowledge lower still. Attitudes were broadly positive but qualified by concerns about government management and gender-differentiated affordability. The leading perceived barriers were information deficit, poor health-worker attitudes, and irregular income. Social media and television were the most preferred communication channels; religious leaders the most trusted. Multivariate logistic regression showed that enrolment intent was driven by perceived net benefit, cost reduction, and institutional trust rather than demographic need. The four qualitative themes contextualised and corroborated these findings. The next chapter interprets and discusses them.



CHAPTER 5:

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter interprets the findings presented in Chapter Four and situates them within the broader theoretical and empirical literature on national health insurance uptake in low- and middle-income countries. The discussion is organised around the study's five specific objectives, addressing awareness, attitudes, perceived barriers, communication preferences, and the factors influencing uptake, and concludes with a discussion of equitable inclusion as the overarching outcome of the conceptual framework. Each section draws together the quantitative and qualitative findings, examining the extent to which they converge, diverge, or extend existing evidence, and considering their implications for the design and rollout of Uganda's proposed National Health Insurance Scheme. The chapter then advances from interpretation to implication, drawing the principal conclusions, presenting targeted policy recommendations, acknowledging limitations and identifying directions for future research.

5.1 Discussion

5.1.1 Sociodemographic profile and its relationship with the proposed NHIS uptake

The sample profile, predominantly young adults (70.4% aged 20–39 years), most with secondary education (54.7%), and self-employment (61.5%) closely matches the established profile of Kampala's informal workforce (Uganda Bureau of Statistics, 2024) (Koolwal & Vanek, 2025). From Andersen's Behavioural Model perspective, these predisposing characteristics showed limited independent influence on enrolment intent after controlling for attitudinal factors in multivariate analysis. This suggests that demographic targeting alone is unlikely to drive meaningful uptake.

Income volatility emerged as a more critical enabling factor constraint, with 59.4% of participants earning below UGX 300,000 monthly or reporting highly irregular incomes. This structural reality makes a flat annual premium of UGX 100,000 particularly challenging, consistent with Andersen's emphasis on enabling resources as proximal determinants of health service access.

5.1.2 NHIS awareness: The actionable gap

The finding that only 14.1% of participants had previously heard of the NHIS, slightly higher than the 10.1% documented in rural Uganda confirms that awareness remains critically low across Uganda's informal sector, whether urban or rural (Namuhani, Kisakye, & Kiwanuka, 2024). Within the DOI Theory framework, this indicates that the vast majority of Kampala's informal workforce has not yet completed the first stage of the innovation-decision process: knowledge acquisition (Rogers, 2003). Without exposure to the innovation's existence, attitudes cannot form, decisions cannot be made, and enrolment cannot occur.

Income showed a statistically significant association with awareness ($\chi^2 = 19.97$, $p = .003$, $V = 0.228$) aligning with broader evidence that higher-income individuals are more likely to access digital and print media and thus exposure to health policy information (Western, et al., 2025). A less commonly reported religion–awareness association ($\chi^2 = 12.93$, $p = .024$) also emerged, possibly reflecting differential exposure and engagement with civic networks and faith-based health outreach across religious groups in Uganda (Franke, et al., 2026). The absence of statistically significant associations between awareness and education, occupation, gender, or marital status is itself important. It indicates that awareness deficits regarding health policies are not concentrated in any single socio-demographic subgroup but are broadly distributed across workers in Kampala's informal sector supporting the adoption of universal rather than narrowly targeted sensitisation strategies.

Even among those who had heard of the NHIS, only 11.1% knew the proposed annual premium. This highlights that mere awareness of the scheme's existence is distinct from the practical knowledge required to evaluate it. According to Rogers (2003), individuals in the knowledge stage must acquire not only awareness-knowledge but also procedural details such as costs, benefits, and coverage. Without this deeper knowledge, they cannot effectively proceed to the persuasion stage, where attitudes toward the innovation are formed. The qualitative data reinforce this finding: most in-depth interview participants reported first learning of the NHIS during the study itself, confirming that the information deficit is not a peripheral concern but a structural barrier that precedes all other determinants in the causal chain. The implication is that sensitisation strategies must go beyond name-recognition campaigns to ensure workers can describe what the scheme offers, who it covers, how much it costs, and how to enrol.

5.1.3 Attitudes: Utility and trust

The overall mean attitude score of 3.58 (SD = 0.65) confirms cautious optimism towards the proposed NHIS. This is consistent with the 87.1% positive attitude rate reported among rural informal workers (Namuhani, Kisakye, & Kiwanuka, 2024) and with generally favourable dispositions found in comparable studies from Indonesia and Ghana (Dartanto, et al., 2020) (Sekyi, Domanban, & Agbenyo, 2022). However, the disaggregated Likert data reveal a more nuanced picture that the mean alone obscures.

Participants expressed strongest agreement on the scheme's instrumental utility, particularly its potential benefits for informal workers (M = 3.77), improved family access to healthcare (M = 3.72), and reduction in healthcare expenses (M = 3.67). These perceptions align with the relative advantage attribute in DOI Theory, widely recognised as the strongest predictor of innovation adoption (Rogers, 2003). Multivariate logistic regression reinforced this linkage: perceived net benefit (OR = 2.85, $p < .001$) and perceived cost reduction (OR = 2.29, $p = .007$) emerged as the two strongest independent predictors of enrolment intent. This underscores a clear policy message that if informal workers believe the scheme will deliver tangible value, they are substantially more likely to enrol.

In contrast, trust in government management of the scheme was the weakest attitudinal dimension (M = 3.44) and remained a significant independent predictor of enrolment intent (OR = 1.57, $p = .024$). Men expressed significantly lower trust than women ($p = .047$), a difference that may reflect men's greater exposure to interactions with public institutions or differing expectations regarding governance of the proposed scheme. Institutional trust has repeatedly been identified as a critical structural precondition for voluntary participation in contributory health insurance schemes among informal sector workers in sub-Saharan Africa (Muntalima, Silumbwe, Zulu, Mweemba, & Hangoma, 2023). The affordability item showed the greatest variability (M = 3.34), with women significantly more likely to perceive the proposed UGX 100,000 annual premium as unaffordable ($p = .001$), reflecting the well-documented economic vulnerabilities faced by many female informal workers (Koolwal & Vanek, 2025).

The qualitative data provide essential explanatory depth on both the trust finding and the conditional nature of positive attitudes. Participants who expressed generally favourable attitudes consistently framed their willingness to enrol conditional on drug availability at facilities, honest governance, and flexible payment options. The 'wait-and-see' posture

articulated across multiple interviews is not passive disengagement but a rational risk-management response grounded in prior experiences of broken public commitments. This means that the statistically significant trust coefficient in the regression model understates the fragility of positive attitudes in practice: participants who score favourably on the trust item in a survey may nevertheless withhold enrolment until they observe concrete evidence of governance integrity. Rebuilding trust therefore requires demonstrated governance change such as independent oversight, transparent fund management, and visible early-adopter benefits rather than communication campaigns alone.

5.1.4 Barriers: Need, cost, trust, and quality as independent constructs

The Spearman correlation analysis produced an analytically and policy-relevant finding: cost and irregular income were moderately correlated ($\rho = 0.51$), whereas health worker attitudes were entirely uncorrelated with cost concerns ($p = .773$). This independence means that addressing affordability through instalment payments or premium flexibility will not automatically improve enrolment among those deterred by poor health worker attitudes, and vice versa. Distinct policy instruments are required for each barrier cluster (Ly, Bassoum, & Faye, 2022).

The ranking of barriers by mean Likert scores further reveals a theoretically important pattern. Lack of sufficient information emerged as the strongest perceived barrier ($M = 3.45$), followed by poor health worker attitudes ($M = 3.38$) and irregular income ($M = 3.26$). Notably, the perception that the UGX 100,000 contribution is “too expensive” scored below the neutral point ($M = 2.85$), suggesting that the absolute cost of the premium is less prohibitive than the unpredictability of being able to pay it consistently. The significant positive association between prior NHIS awareness and enrolment intent ($\chi^2 = 5.64$, $p = .036$) further reinforces that information deficit precedes and conditions all other barriers in the causal chain: workers who are unaware cannot evaluate affordability, assess benefit packages, or identify enrolment pathways.

The information deficit ($M = 3.45$) stands out as the most immediately actionable finding from both the barrier and awareness analyses and is consistent with findings from a study done in Tanzania (Abraham, et al., 2024). It precedes the other barriers in the causal chain: without adequate information, informal sector workers cannot meaningfully assess affordability, evaluate benefit packages, or identify trusted enrolment pathways. The significant positive

association between prior awareness of the NHIS and enrolment intent ($\chi^2 = 5.64$, $p = .036$) reinforces this point.

5.1.5 Communication Channels: The Urban Digital Shift

The dominance of social media (74.0%) and television (58.3%) as preferred channels, compared to radio (39.3%) among Kampala's informal workers marks a notable departure from the rural contexts in Uganda. In rural Uganda, radio and weak interpersonal ties were the primary channels for the diffusion of agricultural innovations (Freeman & Qin, 2020). This shift is structurally grounded because for many informal sector workers, a mobile phone simultaneously functions as a communication tool, a mobile money platform and a social network making platforms such as WhatsApp and TikTok particularly well-suited to first-contact health awareness messaging. However, a key finding of this study is the clear preference–trust mismatch that complicates a purely digital strategy. Although social media was the most preferred channel for receiving information (74.0%), it recorded the lowest trust rating ($M = 3.05$), while religious leaders were the most trusted source ($M = 4.16$), with 82.6% of respondents reporting “very much” trust, yet they were only moderately preferred (16.7%). This pattern aligns with Rogers’ DOI theory, which distinguishes between cosmopolite (mass media) channels effective for creating awareness at the knowledge stage and localite (interpersonal) channels, which carry greater persuasive power during the persuasion and decision stages.

The relatively low preference for health workers as information sources (4.7%), despite their reasonably high trust rating ($M = 3.92$), is also noteworthy. Qualitative findings suggest that while health workers are trusted as clinicians, they are not viewed as legitimate sources for government policy information, and health-facility-based promotion of the NHIS is likely to face credibility challenges unless accompanied by visible improvements in service quality. The qualitative data further introduce two equity caveats that temper the digital-first reading. First, participants across occupations identified community-based interpersonal communication especially through Local Council structures as more persuasive for enrolment facilitation than social media, even among those who preferred digital channels for initial awareness. Second, participants with lower education and older workers described persistent barriers to smartphone use; as one participant noted, digital approaches could exclude workers who are unable to operate a phone, replicating the awareness gap among the most economically marginalized, precisely those the NHIS is designed to protect.

Taken together, these findings describe a layered communication landscape that calls for a sequenced, multi-channel approach rather than a single undifferentiated strategy. High-reach digital and broadcast platforms for initial awareness creation, followed by trusted local actors such as religious leaders, LC officials and SACCO coordinators for trust-building and conversion during the persuasion and decision stages. Overall, reaching Kampala's informal sector is not technically difficult, but persuading its members to enrol requires careful sequencing of channels according to their respective strengths and limitations.

5.1.6 Enrolment intent: From demographics to perceptual drivers

The most consequential finding of this study is the result of the multivariate logistic regression. After controlling for all socio-demographic variables, factors such as age, household size, healthcare utilisation, and number of dependents did not independently predict intention to enrol. Instead, enrolment intent was driven overwhelmingly by attitudinal and perceptual factors: perceived net benefit (OR = 2.85, $p < .001$), perceived cost reduction (OR = 2.29, $p = .007$), and institutional trust (OR = 1.57, $p = .024$). This result is corroborated by the Principal Component Analysis (PCA), which clearly distinguished between a 'Health Vulnerability' component (demographics and need factors) and a 'Perceptual and Attitudinal' component (utility beliefs and trust). The regression confirms that only the latter significantly drives enrolment intent. The policy narrative therefore shifts from demographic targeting (identifying who needs the scheme most) to perceptual and institutional design (ensuring informal workers believe the scheme will deliver value and that it will be managed with integrity). For many informal workers, such as boda-boda riders or market vendors, the proposed UGX 100,000 premium represents a substantial commitment of scarce liquid capital, justifiable only if the system is perceived as reliable and honestly governed.

Significant geographic variation in enrolment intent was also observed ($\chi^2 = 30.52$, $p < .001$), ranging from 63.6% in Central Division to 98.7% in Rubaga Division. This variation was not explained by the socio-demographic or attitudinal variables in the model, pointing instead to unmeasured community-level factors such as local leadership, social network dynamics, and proximity to accredited facilities consistent with DOI Theory's emphasis on the social system as a moderator of adoption rates.

The headline enrolment intention figure of 76.8% warrants careful interpretive qualification, however. Stated intention consistently overestimates actual insurance uptake behaviour in LMIC contexts, where present-bias, income shocks at the point of premium due, and

registration inertia have been shown to systematically reduce conversion from stated intent to actual enrolment (Dartanto, et al., 2020). More importantly, the qualitative data in this study reveal that the majority of the 76.8% represents conditional rather than unconditional intent. Participants who expressed willingness to enrol consistently attached conditions such as adequate drug availability, honest governance, flexible payment modalities, and evidence that early adopters had received the promised benefits. A participant who intends to enrol only if these conditions are met is categorised identically in the survey to one with unconditional intent, but their actual behaviour at the point of scheme launch will depend on whether those conditions are satisfied. The 76.8% figure should therefore be read as an upper-bound estimate of latent demand rather than a forecast of enrolment rates. Converting this conditional intent into actual and sustained participation will depend critically on whether supply-side conditions are demonstrably met before enrolment campaigns are launched.

5.1.7 Equitable inclusion: The overarching outcome

The findings reveal two distinct equity fault lines that must be addressed for the proposed NHIS to achieve broad and fair uptake among Kampala's informal sector workers. First, the uniform flat-rate premium structure poses a significant challenge to equitable access. The affordability item showed the greatest variability ($M = 3.34$), reflecting the wide differences in income levels and volatility that characterise Kampala's informal sector. A one-size-fits-all contribution model that does not account for these disparities, risks producing systematically different enrolment outcomes across income groups; a clear pattern of horizontal inequity. This concern is sharpest for market vendors and street hawkers, a group with disproportionate female representation, low average earnings, and the most irregular income patterns, who recorded the lowest intent at 65.2%. Construction workers (69.8%) showed similarly compromised intent. Both groups are precisely those for whom out-of-pocket health expenditures pose the greatest catastrophic risk and for whom the NHIS would deliver the greatest welfare gains. The scheme's design should therefore incorporate flexible mechanisms such as sliding-scale contributions, instalment payments, or expanded eligibility for the indigent subsidy provided for in the NHIS Bill (2019). Failure to design contribution mechanisms suited to their earnings patterns would mean that the scheme's intended beneficiaries are the least likely to enrol.

Second, geographic equity is at risk. Enrolment intent varied markedly across Kampala's divisions ($\chi^2 = 30.52$, $p < .001$), ranging from 98.7% in Rubaga to 63.6% in Central Division. This gap is not adequately explained by individual socio-demographic or attitudinal variables,

suggesting the influence of unmeasured community-level factors such as local leadership, social network density, and proximity to accredited health facilities. A uniform rollout that fails to tailor outreach and accreditation strategies to divisional realities may widen intra-urban inequalities in coverage. Equitable inclusion must therefore be treated as a core design parameter, embedded from the outset in premium structures, payment mechanisms, accreditation strategies, and sensitisation campaigns. Without deliberate equity-oriented design, both Andersen's Behavioural Model and Diffusion of Innovations Theory predict that the scheme will diffuse fastest among those with the greatest predisposing and enabling resources; an outcome that would invert, rather than fulfil, the universal coverage logic of the reform.

5.2 Conclusions

The study concludes that informal sector workers in Kampala are broadly willing to engage with the proposed NHIS, but this willingness is conditional rather than unconditional. Awareness of the scheme remains critically low across the population, and even where awareness exists, depth of knowledge is insufficient to support informed decision-making. Closing this information gap is the most immediately actionable lever available to NHIS implementers and a necessary precondition for any subsequent intervention.

The drivers of enrolment intent are perceptual rather than demographic. Workers' willingness to join the scheme is shaped overwhelmingly by what they believe the scheme will deliver and by whether they trust those who will run it. Institutional trust functions not as a background attitude but as a proximal determinant of behaviour, and its absence cannot be remedied through communication alone; it requires demonstrable governance reform.

Income irregularity, rather than the absolute cost of the proposed premium, constitutes the core financial constraint. Workers are not categorically unwilling to pay; they are unable to make reliable annual financial commitments when their income is unpredictable. Flexible contribution mechanisms aligned to informal cash-flow patterns are therefore a design requirement rather than an optional refinement.

Facility quality emerges as a non-negotiable prerequisite. Insurance is a credence good whose value cannot be assessed until use, and persistent service-delivery failures will rapidly erode the credibility of the scheme during the critical early-adoption period.

Effective communication will require a sequenced, multi-platform architecture that uses high-reach digital and broadcast channels to establish awareness and reserves locally embedded interpersonal sources for the persuasion and decision stages.

Finally, equitable inclusion is a design parameter rather than a residual concern. The findings reveal two distinct equity fault lines; the uniform flat-rate premium and geographic disparities that must be addressed. Without deliberate equity-oriented design in premium structures, payment mechanisms, accreditation strategies, and sensitisation campaigns, both Andersen's Behavioural Model and Diffusion of Innovations Theory predict that the scheme will diffuse fastest among those with the greatest predisposing and enabling resources; an outcome that would invert, rather than fulfil, the universal coverage logic of the reform.

5.3 Recommendations

- i. The Ministry of Health and partners should integrate flexible and inclusive payment modalities into the scheme before launch, with mobile money positioned as the primary contribution channel and SACCOs and savings groups formalised as alternative collection points. Premium structures should accommodate the income volatility of the informal sector through monthly instalment options and sliding-scale subsidies for the lowest-earning occupational clusters. Five qualitative participants independently proposed instalment payments, describing how daily income cannot accumulate into a lumpsum at a fixed annual payment date.
- ii. Communication strategies should be decentralised and sequenced across channels. Social media and television should be used for first-contact awareness creation, given their dominance as preferred channels (74.0% and 58.3% respectively). Religious leaders, Local Council officials, and informal sector associations should be engaged for the persuasion and decision stages, given that religious leaders were the most trusted source ($M = 4.16$), yet only preferred by 16.7%.
- iii. Institutional trust should be rebuilt through demonstrable governance reform rather than messaging. The Ministry should establish an independent oversight board with informal-sector representation, publish a real-time digital dashboard tracking contributions, claims, and facility performance, and operationalise an accessible grievance mechanism before the scheme launches. Institutional trust was a significant independent predictor of enrolment intent ($OR = 1.57$, $p = .024$), and the qualitative governance trust deficit theme revealed that scepticism is grounded in prior evidence

of fund mismanagement and cannot be resolved by reassurance alone but requires observable governance change before trust converts to enrolment.

- iv. Service-delivery quality must be guaranteed at the point of accreditation. Minimum standards covering essential medicine availability, adequate staffing, and patient-rights compliance should be enforced before facilities are accredited, and a zero-tolerance policy on informal payment demands should accompany the rollout. Six of fifteen qualitative participants raised chronic drug shortages unprompted as a primary condition for the scheme's perceived value. The 76.8% enrolment intention figure represents conditional rather than unconditional intent; conditioned heavily on supply-side quality. Failing to meet this condition before launch risks generating a wave of negative early-adopter experiences that would rapidly suppress the latent demand this study documented.
- v. NHIS messaging should be reframed around financial protection rather than healthcare access alone, positioning the scheme as a mechanism for shielding household assets from the catastrophic costs that drive families into debt. This can be done by quantifying the comparison between current out-of-pocket expenditure and the UGX 100,000 annual premium. Perceived net benefit ($OR = 2.85$) and perceived cost reduction ($OR = 2.29$) were the two strongest independent predictors of enrolment intent in the regression. Qualitative participants who expressed willingness to enrol almost always framed it in terms of financial protection from catastrophic costs, not improved clinical access per se.

5.4 Limitations of the study

Several limitations should inform how these findings are read. The cross-sectional design captures intentions and attitudes at a single point in time, and therefore cannot establish causal direction or track whether stated intentions translate into actual enrolment once the scheme is operational. This matters because stated intent is a proxy for behaviour and is known to overestimate eventual uptake; the 76.8% headline figure should accordingly be read as an indication of willingness rather than a forecast of enrolment.

The sample itself carries further constraints. Convenience sampling at the second stage of the multistage design may have introduced selection bias despite deliberate variation across time, location, and occupation, and the qualitative subsample of 15 was male-skewed (10 men, 5 women), which may have limited the depth of female-specific perspectives even with quota-

based selection. Measurement also imposed limits: two Likert scales; perceived barriers and communication preferences, returned Cronbach's alphas below conventional thresholds, and although item-level analysis preserved content validity, composite reasoning on these constructs is necessarily constrained.

Measurement imposed further limits. Two Likert scales; perceived barriers ($\alpha = .520$) and communication preferences ($\alpha = .328$) returned Cronbach's alpha coefficients below conventional thresholds. While item-level analysis preserved content validity and the low alphas are theoretically defensible as reflecting construct multidimensionality rather than poor item quality, it is acknowledged that this explanation is only partially convincing. A Cronbach's alpha of .328 in particular suggests that some items may not have captured their intended constructs as consistently as required, and that conclusions from these scales carry residual risk of construct misrepresentation even at the item level. Future research would benefit from systematic psychometric instrument development with an informal sector population prior to main data collection.

Finally, the findings are bounded in both context and timing. They reflect urban informal workers in Kampala and should not be extrapolated to rural Uganda or to other towns with different occupational and media profiles. They also reflect perceptions of a scheme that is not yet operational; these perceptions may shift once workers accumulate concrete experience with enrolment, premium collection, and service receipt under the NHIS.

5.5 Suggestions for future research

- i. Longitudinal cohort studies tracking the same informal-sector cohort from pre-launch through the first 24 months of NHIS implementation, to measure how stated intent converts into actual enrolment, premium-payment regularity, and continued participation over time.
- ii. Intervention studies on communication sequencing, comparing digital-first, broadcast-first, and trusted-local-leader-first messaging strategies to identify the most effective combination and order of channels for raising awareness and converting it into enrolment.
- iii. Economic modelling of alternative premium structures such as sliding-scale, income-banded, and instalment-based to estimate their impact on enrolment, financial sustainability, and equitable inclusion compared with the proposed UGX 100,000 contribution.

- iv. Gender-disaggregated qualitative research focused on female informal workers, particularly market vendors, street hawkers, and domestic workers, to unpack the affordability gap documented quantitatively and to inform payment mechanisms that respond to women's earnings patterns.
- v. Implementation research on community-level determinants of enrolment, given the substantial unexplained geographic variation across Kampala's divisions, to identify which social-system features (leadership, network density, facility accreditation, prior community-based insurance exposure) distinguish high-intent from low-intent communities.



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APPENDIX A: RESEARCH QUESTIONNAIRE
RESEARCH SURVEY QUESTIONNAIRE

Study Title: Assessing Awareness and Attitudes Towards National Health Insurance Scheme (NHIS) Uptake among Informal Sector Workers in Kampala Uganda, A Cross-Sectional Study.

Participant Identification number: _____

Location: _____

Date: _____

Preamble for Interviewer:

Health insurance is a mechanism of making periodic prepayments against episodes of illness to enable the payer to obtain healthcare services when needed without paying out-of-pocket at the point of need. It involves sharing the cost of healthcare. In an attempt to improve access to quality healthcare services, Uganda has proposed to roll out NHIS. The scheme would involve contributions (e.g., proposed UGX 100,000 annually), with benefits like consultations, hospitalization, maternity, tests, and drugs.

SECTION A: BACKGROUND INFORMATION

1. Sex: ☐Male ☐Female
2. Date of birth: _____ Age (in years): _____
3. Marital status: ☐Single ☐Married ☐Divorced ☐Separated ☐Widowed
4. What is your religion? ☐Catholic ☐Protestant ☐Muslim ☐Seventh Day Adventist
☐Born Again ☐None ☐Other (specify): _____
5. What is the highest level of education you have completed?
☐No formal ☐Primary ☐Secondary ☐Certificate level ☐Diploma ☐University
6. How many people live in your household (including yourself)? _____
7. How many dependents (e.g., children under 18, elderly relatives) do you support financially?
8. What is your main occupation?
☐Boda-boda rider ☐Taxi driver ☐Market vendor ☐Street hawker ☐Shop proprietor
☐Artisan ☐Other. Specify _____
9. How long have you been involved in this informal sector activity? _____ (years)
10. What is your employment type? ☐Self-employed ☐Employed by someone
11. What is your monthly income in Ugx?
☐Less than 100,000 ☐100,001–300,000 ☐300,001–500,000 ☐500,001–1,000,000
☐Above 1,000,000 ☐Prefer not to say ☐Income varies significantly
12. Are you a member of any savings group, SACCO, burial society or any other resource-pooling scheme? ☐Yes ☐No
13. If yes, what do you mainly save/contribute for? (e.g., health emergencies, education, business, funerals) _____
14. Do you currently have health insurance? ☐Yes ☐No

- If YES, what type? ☐Private insurance ☐Employer-provided ☐Community-based
☐Other: _____
15. How do you rate your overall health status? ☐Very poor ☐Poor ☐Good ☐Very good
16. Do you suffer from any chronic illness? ☐Yes ☐No.
 If yes, specify _____
17. In the past one month, have you or any family member fallen sick? ☐Yes ☐No
 If yes, did you seek treatment? ☐Yes ☐No
 If yes, where did you mainly seek treatment? (Tick all that apply) ☐Public health facility ☐Private health facility ☐Self-treatment (e.g., pharmacy) ☐Traditional healer/herbalist ☐Other (specify): _____
18. What is the distance to the nearest health facility from your home? _____ km
19. Is it a private or public health facility? Private Public
20. In the past 12 months, how many times have you or a household member visited a health facility? ☐None ☐1–2 ☐3–5 ☐6+
21. Has your household faced difficulties paying for healthcare costs in the last 12 months?
☐Yes ☐No
22. The government provides free healthcare in public facilities. What has your experience with this been? (Choose all mentioned by participant)
- ☐Received services without paying
 - ☐Drugs were out of stock
 - ☐Asked to pay for medicines/tests
 - ☐Long waiting time
 - ☐Poor attitude of health workers
 - ☐Good quality care
 - ☐Services unavailable
 - ☐Referred elsewhere
 - ☐No experience with public facility
 - ☐Other

SECTION B: AWARENESS AND KNOWLEDGE OF NHIS

23. Had you ever heard about Uganda's proposed NHIS before today? ☐Yes ☐No
24. If yes, where did you first hear about it? (Select all that apply)
☐Radio ☐TV ☐Newspaper ☐social media ☐Community meetings ☐Health workers
☐Family/friends ☐Government official ☐Other: _____
25. What you have heard or understand about the proposed NHIS, including any benefits you think it might bring or any concerns you have.
- ☐NHIS will require regular contributions
 - ☐Contribution may be UGX 100,000 annually
 - ☐It will cover consultations

- ☐ It will cover hospitalization
 - ☐ It will cover maternity services
 - ☐ It will cover laboratory tests
 - ☐ It will cover drugs/medicines
 - ☐ It reduces out-of-pocket payment
 - ☐ It helps share healthcare costs
 - ☐ It can improve access to healthcare
 - ☐ Not sure how it will work
 - ☐ Had never heard enough details before
 - ☐ Other
-

SECTION C: ATTITUDES TOWARDS NHIS

26. Rate each statement: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

Statement	1	2	3	4	5
NHIS will reduce my overall healthcare expenses.	☐	☐	☐	☐	☐
NHIS will help me and my family access better healthcare.	☐	☐	☐	☐	☐
I trust the government to manage NHIS fairly and transparently.	☐	☐	☐	☐	☐
NHIS will be beneficial for informal workers like me.	☐	☐	☐	☐	☐
The benefit of NHIS outweighs the cost	☐	☐	☐	☐	☐
The proposed annual contribution of UGX 100,000 is affordable for me.	☐	☐	☐	☐	☐

27. Do you think the health facilities are prepared to implement health insurance? (Choose all mentioned by participant)

- ☐ Enough health workers available
- ☐ Not enough health workers available
- ☐ Good quality of services
- ☐ Poor quality of services
- ☐ Medicines and supplies are usually available
- ☐ Medicines and supplies are often unavailable
- ☐ Equipment is available

- ☐ Equipment is inadequate
- ☐ Facility infrastructure/space is adequate
- ☐ Facility infrastructure/space is inadequate
- ☐ Other

28. If NHIS were available tomorrow, what would make you feel more confident about enrolling? (Choose all mentioned by participant)

- ☐ Clear information about benefits package
- ☐ Lower or flexible contribution amounts
- ☐ Ability to pay in instalments
- ☐ Transparency in fund management
- ☐ Assurance of good quality services
- ☐ Availability of medicines and supplies
- ☐ Easy registration process
- ☐ Nearby accredited facilities
- ☐ Good treatment by health workers
- ☐ Evidence the scheme is working for others
- ☐ Trusted leaders endorsing the scheme
- ☐ Coverage for family members
- ☐ Other

SECTION D: PERCEIVED BARRIERS TO NHIS ADOPTION

29. What challenges do you think you might face in joining NHIS? (Choose all mentioned by participant)

- ☐ Contribution amount too high
- ☐ Income is irregular
- ☐ Not enough information about NHIS
- ☐ Difficult registration process
- ☐ Distance to facilities
- ☐ Poor quality of care Stockouts of medicines
- ☐ Poor attitudes of health workers
- ☐ Do not trust government management
- ☐ Religious/cultural concerns
- ☐ Scheme may not cover needed services
- ☐ Lack of time to register/pay
- ☐ Other

30. Rate each statement: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

Statement	1	2	3	4	5
The NHIS contribution of UGX 100,000 is too expensive.	☐	☐	☐	☐	☐
I do not have enough information about NHIS.	☐	☐	☐	☐	☐
It will be difficult to register or access NHIS services.	☐	☐	☐	☐	☐
My irregular income makes it hard to contribute regularly.	☐	☐	☐	☐	☐
Religious/cultural beliefs may discourage me from joining.	☐	☐	☐	☐	☐
NHIS may not cover the services I need	☐	☐	☐	☐	☐
Poor attitudes of health workers in facilities would discourage me from using NHIS.	☐	☐	☐	☐	☐

31. What barriers do you think will hinder people especially informal workers like you from enrolling into the scheme? (choose all mentioned by participant)

- ☐ High contribution cost
- ☐ Irregular incomes among informal workers
- ☐ Low awareness of NHIS
- ☐ Mistrust in government
- ☐ Complex registration process
- ☐ Poor service quality at facilities
- ☐ Medicine stockouts
- ☐ Negative health worker attitudes
- ☐ Distance/transport costs
- ☐ Religious/cultural beliefs
- ☐ Limited benefit package
- ☐ Preference for out-of-pocket/self-treatment
- ☐ Lack of required documents
- ☐ Other

32. In your opinion, what solutions could make NHIS more suitable for informal workers? (Choose all mentioned by participant)

- ☐ Reduce contribution amount
- ☐ Allow instalment payments
- ☐ Use mobile money for payments
- ☐ Register people through SACCOs/groups
- ☐ Increase community sensitization

- ☐ Improve transparency/accountability
- ☐ Improve quality of services
- ☐ Ensure medicine availability
- ☐ Accredite more nearby facilities
- ☐ Include family/dependents
- ☐ Improve health worker attitudes
- ☐ Simplify registration process
- ☐ Provide subsidies for low-income workers
- ☐ Engage local leaders
- ☐ Other

SECTION E: COMMUNICATION AND INFORMATION PREFERENCES

33. What are your preferred channels for receiving health information? (Select top 3)

- ☐ Radio
 ☐ TV
 ☐ Newspaper
 ☐ social media
 ☐ Posters
 ☐ Community meetings
 ☐ Religious gatherings
 ☐ Health workers
 ☐ Other: _____

34. On a scale of 1–5, how much do you trust each of the following?

1 = Not at all 2 = To a small extent 3 = To a moderate extent 4 = To a large extent 5 = Very much

Communication channel	1	2	3	4	5
Radio	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Newspapers	☐	☐	☐	☐	☐
Social media	☐	☐	☐	☐	☐
Health workers	☐	☐	☐	☐	☐
Religious leaders/gatherings	☐	☐	☐	☐	☐
Social media	☐	☐	☐	☐	☐

35. In your opinion, what is the best way to inform informal sector workers about NHIS?

(Choose all mentioned by participant)

- ☐ Radio talk shows/announcements
- ☐ TV programs/announcements
- ☐ Social media campaigns
- ☐ Community meetings/barazas
- ☐ Posters/flyers

- ☐ Health workers explaining at facilities
- ☐ Religious leaders/gatherings
- ☐ Local council leaders
- ☐ SACCO/group meetings
- ☐ SMS/mobile phone messages
- ☐ Market outreach campaigns
- ☐ Peer educators/community champions
- ☐ Other

SECTION F: INTENTION TO ADOPT NHIS

36. Do you think the proposed NHIS scheme is beneficial? ☐Yes ☐No.

Reason: _____

37. Rate each statement: 1 = Very unlikely, 2 = Unlikely, 3 = Neutral, 4 = Likely, 5 = Very likely

Statement	1	2	3	4	5
How likely are you to join NHIS when operational?	☐	☐	☐	☐	☐
How likely are you to encourage family/friends to join?	☐	☐	☐	☐	☐

38. If you are likely or very likely to join, what would be your preferred mode of payment for NHIS contributions and why? (Select all) ☐Annual lump sum ☐Monthly instalments ☐Via mobile money ☐Through SACCO/group ☐Deducted from income ☐Other: _____

Interviewer Notes:

Thank you for your participation.

APPENDIX B: INTERVIEW GUIDE –IN-DEPTH INTERVIEWS

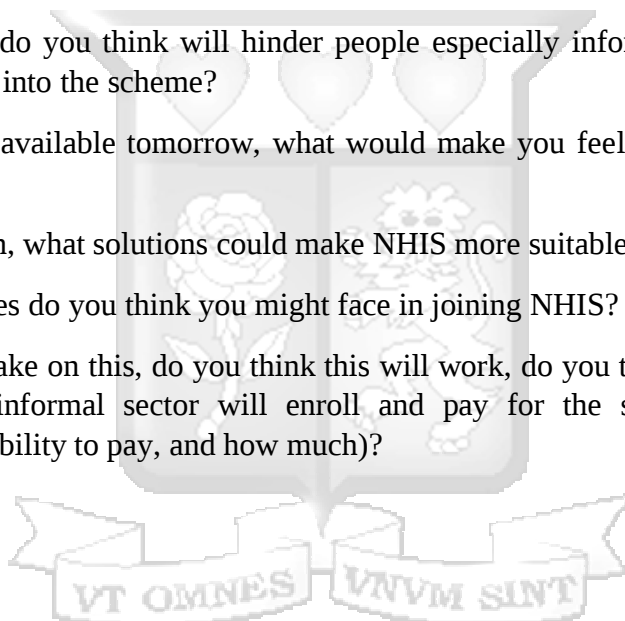
Participant ID: _____

Date of interview: _____

Age: _____ **Gender:** _____ **Occupation:** _____

1. Please explain in as much detail as you can what you have heard or understand about the proposed NHIS, including any benefits you think it might bring or any concerns you have.
2. Do you think the health facilities are prepared to implement health insurance (probe for availability of health workers, quality of services, availability of supplies etc)?
3. What experiences (personal, family, or from friends/colleagues) have shaped your views on trusting the government to manage NHIS fairly and transparently? Please describe any examples.
4. What barriers do you think will hinder people especially informal workers like you from enrolling into the scheme?
5. If NHIS were available tomorrow, what would make you feel more confident about enrolling?
6. In your opinion, what solutions could make NHIS more suitable for informal workers?
7. What challenges do you think you might face in joining NHIS?
8. What is your take on this, do you think this will work, do you think people especially those in the informal sector will enroll and pay for the scheme (acceptability, affordability, ability to pay, and how much)?

END



APPENDIX C: INFORMED CONSENT FORM – ENGLISH

INFORMED CONSENT

Study Title: Assessing Awareness and Attitudes Towards National Health Insurance Scheme (NHIS) Uptake among Informal Sector Workers in Kampala Uganda, A Cross-Sectional Study.

Participant name: _____

Participant Identification number: _____

Study site: _____

Principal Investigator:

Dr. Sandra Ninsiima

sandra.ninsiima@strathmore.edu

Strathmore University Business School

Background and rationale for the study:

We are researchers from Strathmore University in Nairobi, Kenya. We are conducting a study to understand what people who work in the informal sector in Kampala such as market vendors, boda-boda riders, street hawkers, and casual workers, know about Uganda's proposed National Health Insurance Scheme (NHIS), and what they think about it. The NHIS is a new government program for paying for healthcare where members make regular contributions and in return, can access health services without paying any money each time they visit a health facility. For informal sector workers, the proposed contribution is UGX 100,000 per year. Many people in Uganda, especially those who work in the informal sector do not have health insurance and often struggle to pay medical bills. We would like to hear your views including what you have heard about it, what you think about it, and what challenges you see in joining. We are also interested in how you would like to receive information about the scheme. The results from this study will help the government design a scheme that works for people like you.

Organizational affiliation:

This research is being conducted as part of a Master of Business Administration degree requirement at Strathmore University Business School, Nairobi, Kenya. The study is supervised by Prof. Joseph Onyango and Mr. Eric Tama. The research is being conducted independently by the researcher and is not sponsored by any external organization.

Purpose:

The purpose of this study is to find out what informal sector workers like you know about the proposed NHIS, what you think about it, and what challenges you might foresee in joining the scheme. You are being asked to participate because you are part of the informal sector in Kampala, and your views are very important for ensuring that the NHIS is fair and useful to workers like yourself.

Procedures:

If you agree to take part in this study, we shall only ask you to share your opinions and experiences through a questionnaire, and this will take about 30 to 40 minutes of your time. You will only participate once, and you will not be asked to attend any other sessions. The investigator or a trained research assistant will ask you questions from the questionnaire. The questions will be about what you know about the NHIS, how you feel about national health insurance, what difficulties you think you might face in joining such a scheme, and where you usually get health information. We will also ask you for some general details, such as your age, gender, education level, type of work, and income range, among others. The questions will be read to you in either English or Luganda, depending on your preference, and your answers will be recorded electronically using a tablet or smartphone. You are free to skip any question you do not want to answer, and you can stop at any time without any consequences.

Participation:

This study will include about 384 informal sector workers from across Kampala's five divisions: Central, Kawempe, Makindye, Nakawa, and Rubaga. Participants will include individuals such as boda-boda riders, taxi drivers, market vendors, hawkers, artisans such as tailors and mechanics, shop owners, hairdressers, mobile money agents, and construction workers. Each person will take part only once while answering the questions.

Risks/Discomforts:

This study has very few risks. The only possible discomforts are that it may take a bit of your time, which could interfere with your daily work; and some questions about income or health may feel a little uncomfortable. To reduce these risks, you will be interviewed at a time that is convenient for you, you can skip any questions that make you uncomfortable, and your information will be kept safe. There are no physical, clinical or legal risks associated with participation in this study.

Benefits:

Although you may not receive direct financial or personal benefits, there are still some advantages. By taking part, you will learn more about the proposed National Health Insurance Scheme and how it could benefit informal workers. You will also have the chance to share your thoughts and concerns, which could help the government improve the scheme. On a wider level, the information you provide will help policymakers and health partners design an NHIS that is fair and more accessible to informal workers like yourself. This study will also add to the knowledge about health insurance in Uganda, which could benefit many other communities in the future.

Compensation

You will receive UGX 5,000 as a token of appreciation for your time and participation in this study. This amount is meant to compensate you for the time you spend away from your work during the interview, which will take approximately 30 to 40 minutes. The compensation will be provided immediately after you complete the interview. You can choose to receive it either

as a direct transfer to your mobile number or cash, whichever you prefer. You will receive this compensation even if you choose to skip some questions or stop the interview early.

Confidentiality:

Your privacy is very important to us. We will only collect your name on this form, and the questionnaire will only have an ID number which will be assigned sequentially at the time of your recruitment. This ID cannot be used to identify you by anyone outside of the research team. Any other details that can identify you personally will not be collected. All the information collected will be stored safely on password-protected devices and will only be seen by the research team. The final report will combine everyone's answers, and no one will be able to identify you from the results. The only organizations that may have access to the document with your name for quality purposes are Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC), the Kawempe National Referral Hospital Research Ethics Committee (SPHREC) and the Uganda National Council for Science and Technology (UNCST). They will not share your personal information with anyone else.

Further information:

If you have any questions about this study, you can contact the principal investigator, Dr. Sandra Ninsiima, via email on sandra.ninsiima@strathmore.edu or on +256 783 702907, the research supervisors, Prof. Joseph Onyango, Strathmore University Business School, email jonyango@strathmore.edu and Mr. Eric Tama via etama@strathmore.edu, the SU-ISERC Secretary via ethicsreview@strathmore.edu or on +254 703 034418.

If you have any questions about your rights as a research subject, you can call Dr. Sam Ononde , the Chairperson of the Kawempe National Referral Hospital Research and Ethics Committee, on 0772486301 or emailononge2006@yahoo.com.

Voluntary Participation:

Taking part in this study is completely your choice. You are free to decide whether or not you want to participate. If you choose to take part, you have the right to withdraw at any time, and you do not have to give a reason. You can also refuse to answer any question you do not feel comfortable with. If you choose not to participate, nothing bad will happen to you. Your work, your access to healthcare, and your chances of benefiting from future health insurance schemes will not be affected in any way.

Ethical approval:

This study has been reviewed and approved by the Kawempe National Referral Hospital Research and Ethics Committee and by the Uganda National Council for Science and Technology.

STATEMENT OF CONSENT

..... has described to me what is going to be done, the risks, the benefits involved and my rights regarding this study. I understand that my decision

to participate in this study will not cause me any harm. In the use of this information, my identity will be concealed. I am aware that I may withdraw at any time. I understand that by signing this form, I do not waive any of my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided to me.

Name of the participant

Signature/thumb print of the participant

Date

Name of the interviewer

Signature of the interviewer

Date



APPENDIX D: INFORMED CONSENT FORM – LUGANDA

OKUKKIRIZA OKWETABA MU KUNOONYEREZA

Omutwe gw'okunoonyereza: Okwewandiisa mu nteekateeka ya yinsuwa y'ebyobulamu ey'eggwanga (NHIS) mu bakozi abatalina mirimu gya buwandiike mu Kampala: Okukebera okumanya n'endowooza ku kwetabwamu mu ngeri ey'obwenkanya.

Erinnya: _____

Omuwendo gw'obulambe: _____

Ekifo awakolebwa okunoonyereza: _____

Omunoonyereza omukulu:

Muwaso Sandra Ninsiima

sandra.ninsiima@strathmore.edu

Strathmore University Business School

Ebikwata ku kunoonyereza kuno n'ensonga lwaki kukolebwa:

Ffe tuli banoonyereza okuva ku Strathmore University e Nairobi, mu Kenya. Tukola okunoonyereza okusobola okutegeera abantu abakolera mu kitundu ky'emirimu egy'akaseera mu Kampala gamba ng'abatunda mu katale, abavuga boda-boda, abatunda ku nguudo, n'abakola emirimu egy'akaseera, kye bamanyi ku yinsuwa y'ebyobulamu ey'eggwanga eya Uganda egitegekeddwa, era n'endowooza yaabwe ku yo. Gavumenti ya Uganda eteekateeka okutandikawo enteekateeka ya yinsuwa y'ebyobulamu ey'eggwanga (NHIS). Eno y'engeri empya ey'okusasula ssente z'ebyobulamu abantu basobole okufuna obujjanjabi nga tebalina kusasula ssente nnyingi buli lwe bagenda ku ddwaaliro. Abantu bangi mu Uganda naddala abakola mirimu egyitali gya buwandiike, okugeza ng'abasuubuzi b'omubutale, abavuzi ba boda-boda, abasuubuzi b'okunguudo, n'abakola emirimu egy'akaseera obuseera, tebalina yinsuwa y'ebyobulamu era batera okukalubizibwa okusasula ebisale by'obujjanjabi. Okunoonyereza kuno kwagala okuwulira endowooza zo ku NHIS eteeseddwa, omuli by'owuliddeko, by'olowooza ku nsonga eno, n'okusoomoozebwa kw'olaba mu kwegatta. Era tufaayo ku ngeri gy'oyagala okufunamu amawulire agakwata ku nteekateeka eno. Ebinaava mu kunoonyereza kuno bijja kugabibwa ne minisitule y'ebyobulamu awamu n'ebibiina ebirala ebikulu basobole okukola enteekateeka ya yinsuwa ekola ku buli muntu omuli n'abakozi

abatalina mirimu gya buwandiike. Mu ngeri eno, Bannayuganda bonna bajja kusobola okufuna obujjanjabi mu ngeri ennyangu era nga tebeeraliikirira nnyo bisale bingi.

Ekitongole ekikola ku okunoonyereza kuno:

Okunoonyereza kuno kukolebwa nga kitundu ku byetaago eby'okutuukiriza diguli ya Master of Business Administration (MBA) mu Strathmore University Business School e Nairobi, Kenya. Okunoonyereza kuno kulabirirwa Pulofeesa Joseph Onyango ne Mukulu Eric Tama. Omunoonyereza omukulu yetoongodde ng'akola okunoonyereza kuno era tekuwagirwa kitoongole kirala kyonna.

Ekgendererwa

Ekgendererwa ky'okunoonyereza kuno kwe kuzuula by'omanyi ku yinsuwa y'ebyobulamu ey'eggwanga (NHIS) eteeseddwa, ky'olowooza ku nsonga eno, okusoomoozebwa kw'oyinza okulaba mu kwegatta ku nteekateeka eno. Osabibwa okwetaba kubanga okola emirimu egyitali gya buwandiike mu Kampala, era endowooza zo nkulu nnyo okulaba nga NHIS ya bwenkanya era ya mugaso eri abakozi nga ggwe.

Ebigobererwa:

Bw'oba okkirizza okwetaba mu kunoonyereza kuno, tujja kukusaba okugabana endowooza zo n'ebyo by'oyitamu nga tuyita mu mbuuzamuntu, era kino kijja kutwala wakati w'eddakiika amakumi asatu ku makumi ana ez'obudde bwo. Ojja kwetaba omulundi gumu gwokka, era tojja kusabibwa kugenda mu ntuula ndala zonna.

Bw'oba okkirizza okwetaba, nze, omunoonyereza omukulu oba omuyambi wange omutendeke, tujja kukubuuza ebibuuzo ebiri mu mbuuzamuntu. Ebibuuzo bijja kuba bikwata ku by'omanyi ku NHIS, engeri gy'owulira ku yinsuwa y'ebyobulamu ey'eggwanga, ebizibu by'olowooza nti oyinza okusisinkana singa weegatta ku nteekateeka ng'eyo, ne w'otera okufunira obubaka obukwata ku by'obulamu. Nate, tujja kukubuuza okumanya ebikukwatako, okugeza emyaka, ekikula, eddaala ly'obuyigirize, ekika ky'emirimu gy'okola, n'enyigiza yo, n'ebirala. Ebibuuzo bijja kukusomebwa mu Lungereza oba mu Luganda, okusinziira ku lulimi lw'oyagala, era by'oyanukudde bijja kuwandiikibwa mu byuma bikalimagezi omuli essimu ey'okusereza. Oli wa ddembe obutayanukula kibuuza kyonna ky'otayagala kuddamu, era osobola okumaliriza okwetaba ekiseera kyonna awatli buzibu yadde.

Okwetaba:

Okunoonyereza kuno kugenda kuzingiramu abakozi abakola mirimu egyitali gya buwandiike nga ebikumi bisatu mu kinaana mu bina (384) okuva mu bitundu bitano eby'e Kampala: Central, Kawempe, Makindye, Nakawa, ne Rubaga. Abeetabye bagenda kubeera abo abakola

emirimu gino wammanga: abavuzi ba boda-boda, abavuzi ba takisi, abasuubuzi b'omubutale, abasuubuzi b'okunguudo, abakozi b'emikono ng'abatunga engoye ne bamakanika, bannannyini maduuka, abakola mu nviiri, abakola mu kusiindika sente, n'abazimbi. Buli muntu ajja kwetabamu omulundi gumu gwokka ng'ayanukula ebibuuzo.

Ebizibu ebisoboka / Embeera ey'obutawulira butebenkevu

Okunoonyereza kuno kulina obulabe butini nnyo. Okusoomoozebwa kwokka okuyinza okubaawo kwe kuba nti kiyinza okukutwalira akaseera akatono, ekiyinza okutaataaganya emirimu gyo egya bulijjo, era oyinza obutaba mutebenkevu na ku bibuuzo ebikwata ku nfuna oba eby'obulamu. Okukendeeza ku bulabe buno, ojja kubuuzibwa ebibuuzo mu kiseera w'oyagalidde, osobola obutayanukula bibuuzo by'otayagadde kuddamu, era ebikukwatako bijja kukuumbwa bulungi. Tewali buzibu bwa mubiri, bwa bujjanjabi, oba bwa mateeka obukwatagana n'okwetaba mu kunoonyereza kuno.

Emigaso:

Newankubadde oyinza obutafuna miganyulo mu by'ensimbi oba ey'obuntu, wakyaliwo ebirungi ebirala. Bw'ewetaba, ojja kuyiga ebisingawo ku nteekateeka ya yinsuwa y'ebyobulamu ey'eggwanga etegekeddwa n'engeri gy'eyinza okuganyula abakozi abatali mu mirimu gy'abuwandiike. Era ojja kufuna omukisa okugabana ebirowoozo byo n'ebikweraliikiriza, ekiyinza okuyamba Gavumenti okulongoosa enteekateeka eno. Ku mutendera omunene, obubaka bw'owadde bujja kuyamba abateekateeka amateeka n'abakola ku by'obulamu okukola NHIS ey'obwenkanya era ekozesebwa abakozi abatali mu mirimu gy'abuwandiike nga ggwe. Okunoonyereza kuno kujja n'okwongera ku bumanyi ku yinsuwa y'ebyobulamu mu Uganda, ekiyinza okuganyula ebitundu ebirala bingi mu biseera eby'omu maaso.

Empeera

Ojja kufuna ssente za Uganda Shillings 5,000 ng'akabonero k'okusiima olw'obudde bwo n'okwetaba mu kunoonyereza kuno. Sente zino zigendereddhamu okukusasula olw'obudde bw'oggyibwa ku mulimu gwo mu kiseera ky'okubuuza ebibuuzo, ekigenda okutwala eddakiika nga 30 okutuuka ku 40.

Empeera eno ojja kugifuna mangu ddala ng'omaze okuddamu ebibuuzo. Osobola okugifuna nga esindikiddwa ku ssimu yo (mobile money) oba mu cash, nga bwe waba oyagadde. Ojja

kufuna empeera eno ne bwe wabaawo ebibuuzo by'osalawo obutaddamu oba ng'osalawo okukomya okwebuuzza nga tonnamaliriza.

Okukuuma ebikukwatako nga bya kyama:

Eby'ekyama byo bikulu nnyo gye tuli. Tujja kukunjaanya erinnya lyo lyokka ku ffoomu eno, era embuuzamuntu ejja kubaako omuwendo gw'obulambe gwokka . Atte gujja kuweebwa mu nsengeka (mu mitendera egiddiragana) mu kiseera ky'okukuwandiisa mu kunoonyereza kuno. Omuwendo gw'obulambe teguyinza kukozezebwa kumanya oba kutegeera ggwe muntu yenna ali ebweru w'timu y'abanoonyereza. Ebintu ebirala byonna ebiyinza okukumanyisa ng'omuntu tebijja kukunjaanyizibwa. Ebikukwatako byonna bijja kuterekebwa bulungi ku byuma ebirina “password”era bijja kulabibwa abakozi b'okunoonyereza kuno bokka. Alipoota esembayo ejja kugatta okwanukula kwa buli muntu, era tewali ajja kusobola kukutegeera okusinziira ku bivuddemu. Ebitongole ebiyinza okufuna ekiwandiiko ekiriko n'erinnya lyo olw'ebigendererwa by'omutindo ye “Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC)”, “Kawempe National Referral Hospital Research Ethics Committee (KNRHREC)” ne “Uganda National Council for Science and Technology (UNCST)”. Tebajja kugabana bikukwatako na muntu yenna.

Ebisingawo:

Bw'oba olina ebibuuzo byonna ku kunoonyereza kuno, osobola okutuukirira omunoonyereza omukulu, Musawo Sandra Ninsiima, ng'oyita ku “email” sandra.ninsiima@strathmore.edu oba ku ssimu +256 783 702907, abalabirira okunoonyereza kuno, Pulofeesa Joseph Onyango, Strathmore University Business School, “email” jonyango@strathmore.edu ne Mukulu Eric Tama ng'ayita ku etama@strathmore.edu, Omuwandiisi wa SU-ISERC ng'ayita ku ethicsreview@strathmore.edu oba ku ssimu +254 703 034418.

Bw'oba olina ebibuuzo byonna ku ddembe ng'etabye mu kunoonyereza kuno, osobola okukubira Musawo Sam Ononde, Ssentebe w'akakiiko akaakakasa n'okukkiriza okunoonyereza kuno akayitibwa “Kawempe National Referral Hospital Research and Ethics Committee”, ku ssimu 0772486301 oba “email” ononge2006@yahoo.com.

Okwetaba okwannakyewa:

Okwetaba mu kunoonyereza kuno kusalawo kwo ddala. Oli wa ddembe okusalawo oba oyagala okwetabamu oba nedda. Bw'osalawo okwetabamu, osobola obuteetaba essaawa yonna, era

tolina kuwa nsonga. Osobola n’obutayanukula kibuuza kyonna ky’otayagadde. Bw’osalawo obuteetabamu, tewali bulabe bujja kukutuukako. Omirimu gyo, okufuna obujjanjabi, n’emikisa gyo egy’okuganyulwa mu nteekateeka za yinsuwa y’ebyobulamu mu biseera eby’omu maaso tebijja kukosebwa mu ngeri yonna.

Olukusa okuttukkiriza okukola okunoonyereza kuno:

Okunoonyereza kuno kwa kakasibwa abukiiko obw’etegereza empisa mu kunoonyereza okuli aka “Kawempe National Referral Hospital Research and Ethics Committee” awamu ne “Uganda National Council for Science and Technology”.

SITETIMENTI Y’OKUKKIRIZA

..... annyinyonnyodde ebigeenda okukolebwa, obuzibu bwe nnyinza okusanga, ebirungi ebikirimu awamu n’eddembe lyange nga nneetaba mu kunoonyereza. Nkitegeera nti okusalawo kwange okwetabamu kunoonyereza kuno tekujja kundeetako bulabe byonna. Mu kukozesa obubaka buno, ebinkwatako bijja kukwekebwa. Nkimanyi nti nsobola okuva mu kunoonyereza kuno ekiseera kyonna. Nkitegeera nti okwetaba mu kunoonyerezakuno, sitataaganya ddembe lyange lyonna likwata ku bya mateeka, wabula kiraga bulazi nti ntegeezeddwa ku bikwata ku kunoonyereza kuno era nga ndi mwetegefu okukwetabamu kyeyagalire. Kkopi ya ffoomu eno ejja kumpeebwa.

Erinnya ly’omwetabi.....

Omukono oba ekigalo ky’omwetabi.....

Ennaku z’omwezi

Erinnya ly’abuuzizza ebibuuzo

Omukono gw’abuuzizza ebibuuzo.....

Ennaku z’omwezi

APPENDIX E: STRATHMORE ETHICS APPROVAL



16th March 2026

Dr Ninsiima Sandra,
sandra.ninsiima@strathmore.edu

Dear Dr Ninsiima,

RE: Assessing Awareness and Attitudes Towards National Health Insurance Scheme (NHIS) Uptake Among Informal Sector Workers in Kampala Uganda, A Cross-Sectional Study

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC3371/26**. The approval period is from **16th March 2026 to 15th March 2027**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, and 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 affect the 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,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

APPENDIX F: ETHICAL APPROVAL FROM UGANDAN REC – KNRHREC

Tele : 0414 672552

Email : kawemperefhosp18@gmail.com

FOR ANY CORRESPONDENCE ON THIS
SUBJECT PLEASE QUOTE NO: KNRH/REC:008



Office of the Executive Director

Kawempe National Referral Hospital

Plot 1035/3883 Kawempe, Bombo Road

P. o. Box 3253 Kampala, Uganda

THE REPUBLIC OF UGANDA

KAWEMPE NATIONAL REFERRAL HOSPITAL RESEARCH ETHICS COMMITTEE

24th /02/2026

To: Ninsiima Sandra

Type: Initial Review

Re: KNRH-REC-2026-002: NATIONAL HEALTH INSURANCE SCHEME (NHIS) UPTAKE AMONG INFORMAL SECTOR WORKERS IN KAMPALA: ASSESSING AWARENESS AND ATTITUDES FOR EQUITABLE INCLUSION

I am pleased to inform you that the Kawempe National Referral hospital REC (**KNRH-REC**), through its review held on **30th /01/2026** voted to approve the above referenced study. Approval of the research is for the period of **24th/02/2026 to 23rd/02/2027**.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re- review and approval **prior**: to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.



5. Continuing review application must be submitted to the REC **six weeks** prior to the expiration date of **23rd/02/2027** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.

The following is the list of all documents approved in this application by KNRH- REC

No.	Document Title	Language	Version Number	Version Date
1	Protocol	English	02	2026-02-23
2	Informed consent form English	English	02	2026-02-23
3	Informed consent form Luganda	Luganda	02	2026-02-23
4	Questionnaire	English	02	2026-02-23
5	Rebuttal letter	English	01	2026-02-23

Yours Sincerely,

Signature

Dr. Ononge Sam
Chair KNRH-REC



APPENDIX G: ADMINISTRATIVE CLEARANCE FROM KAMPALA CITY COUNCIL AUTHORITY



**DIRECTOR PUBLIC HEALTH
AND ENVIRONMENT**

REF: DPHE/KCCA/1302/01

16th March, 2026

Ms.Ninsiima Sandra
Strathmore University
+256(0) 783702907
Nairobi, Kenya

ADMINISTRATIVE CLEARANCE

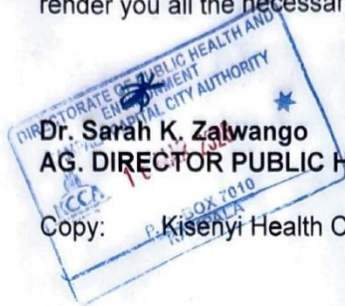
Reference is made to your letter dated 12th March, 2026 on the above subject matter.

This is to inform you that permission has been granted to you to conduct research entitled **“NATIONAL HEALTH INSURANCE SCHEME (NHIS) UPTAKE AMONG INFORMAL SECTOR WORKERS IN KAMPALA: ASSESSING AWARENESS AND ATTITUDES FOR EQUITABLE INCLUSION)”** for a period of three months (02) from 13th March, 2026 to 13th May 2026. The above permission is granted to you on the following conditions:

1. Participation in your study is voluntary and the informed consent process should be observed at all times.
2. You will provide a report to the office of the Director Public Health and Environment of your findings.
3. You will strictly adhere to the study protocol and make no changes without informing the Director Public Health and Environment.

P. O. Box 7010 Kampala – Uganda
Plot 1 – 3 Apollo Kaggwa Road
Toll free line: 0800299000
Email: info@kcca.go.ug
@KCCAUG
WWW.KCCA.GO.UG

By copy of this letter, the Kisenyi Health Centre IV is requested to render you all the necessary support.



Dr. Sarah K. Zalwango
AG. DIRECTOR PUBLIC HEALTH AND ENVIRONMENT

Copy: Kisenyi Health Centre IV