FACULTY OF SCIENCE AND EDUCATION

DEPARTMENT OF ECONOMICS AND ENTREPRENEURSHIP

THE ROLE OF MOBILE MONEY SERVICES IN ENHANCING ECONOMIC INCLUSION AMONG THE PASTORAL KARAMOJA IN NADUNGET SUB-COUNTY, MOROTO DISTRICT, UGANDA

BY

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A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF ECONOMICS AND ENTREPRENEURSHIP IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF SCIENCE AND EDUCATION OF BUSITEMA UNIVERSITY

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ABSTRACT

This study examined the role of mobile money services in enhancing economic inclusion among pastoral communities in Nadunget Sub-county, Moroto District, Uganda. Although mobile money registration in Karamoja stands at approximately 80%, active usage has been reported as low as 31%, indicating a significant gap between account ownership and genuine financial participation (KRSU, 2021; SciELO SA, 2021). The study investigated the key barriers to active mobile money use including low digital literacy, unreliable network coverage, agent illiquidity, and cultural mistrust of digital platforms and explored how mobile money can be optimised to deliver safe savings, access to credit, and secure transactions for pastoralist households. A mixed-methods, cross-sectional research design was adopted. Data were collected from pastoralist households, mobile money agents, and key informants in Nadunget Sub-county through structured surveys, semi-structured interviews, and focus group discussions. The study was grounded in Financial Inclusion Theory (Demirgüç-Kunt et al., 2018) and Technology Adoption frameworks (Mbiti & Weil, 2015). This report presents the background, methodology, and data collection instruments used, together with the framework for presenting findings in Chapter Four. The study sampled 80 pastoralist households, 10 mobile money agents, and 15 key informants in Nadunget Sub-county. Findings show that while mobile phone ownership (88.8%) and mobile money registration (86.3%) are now widespread, active and independent use remains considerably lower, constrained mainly by poor network coverage, agent illiquidity, and low digital literacy. Findings are intended to inform context-specific policy recommendations for mobile money operators, local government, and development partners working in pastoralist areas of Uganda.

DECLARATION

I, LOCHORO MICHAEL, **Reg no:** BU/UP/2023/3954 declare that this research report is my original work, based on my own field investigation, and that it has never been submitted to any institution for any academic award.

Signature: ....

Date: 26/08/2026..

SUPERVISOR'S APPROVAL

This research report has been submitted for examination as partial fulfilment of the requirements for the award of a Bachelor of Science and Education of Busitema University, with the approval of the academic supervisor.

MR. PEREMBA ESAU

Signature: ……………………………………………………

Date: ……26/08/2026……………………………

DEDICATION

This research work is dedicated, first and foremost, to the Almighty God for His grace, protection, and guidance throughout my academic journey.

To the pastoral communities of Karamoja, especially the resilient people of Nadunget Sub-county, whose lives, struggles, and hopes inspired this study. Your strength in the face of adversity, your deep connection to your livestock and land, and your unwavering spirit continue to inspire research that seeks to improve livelihoods in underserved regions of Uganda. It is my sincere hope that this study contributes, in some small way, to improving your access to financial services and enhancing your economic well-being.

To FAWE Uganda (Forum for African Women Educationalists Uganda Chapter), my esteemed sponsor, I dedicate this work with profound gratitude. Your investment in my education has been a beacon of hope and a testament to your commitment to empowering young people through education. Your support has not only made this research possible but has also transformed my life and aspirations. I am eternally grateful for the opportunity you have given me, and I pledge to use the knowledge and skills acquired to contribute meaningfully to the development of my community and country.

To my beloved parents, whose sacrifices, prayers, and unwavering belief in me have been my anchor and motivation. Your hard work and dedication to my education have laid the foundation upon which this achievement stands. I carry your hopes and dreams with me always.

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To Busitema University, my alma mater, and the Department of Economics and Entrepreneurship, for providing the academic environment and resources necessary for this research. The knowledge and skills acquired here will serve me for a lifetime.

Finally, to all those who believed in me, prayed for me, and supported me in ways big and small this achievement is as much yours as it is mine. May this dedication be a reminder that with determination, support, and faith, any dream is attainable

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ACRONYMS AND ABBREVIATIONS

FGD: Focus Group Discussion

LC: Local Council (administrative unit)

MNO: Mobile Network Operator

MOM: Mobile Money

MTN: Mobile Telephone Networks (Uganda)

PIN: Personal Identification Number

P2P: Person-to-Person (mobile money transfer)

SPSS: Statistical Package for the Social Sciences

TAM: Technology Acceptance Model

UBOS: Uganda Bureau of Statistics

UNCDF: United Nations Capital Development Fund

UNCST: Uganda National Council for Science and Technology

USSD: Unstructured Supplementary Service Data

CHAPTER ONE

1.0 INTRODUCTION

This chapter presents the background of the study on the role of mobile money services in enhancing economic inclusion among pastoral communities in Nadunget Sub-county, Moroto District, Uganda. The chapter provides a comprehensive overview of the research, including the background of the study, the problem statement, the major and specific objectives, the research questions, the scope of the study, and its significance. The chapter establishes the foundation upon which the entire research is built and justifies the need for investigating how mobile money can be optimised to serve pastoralist communities effectively.

1.1 Background of the Study

Economic inclusion refers to the capacity of all people especially the poor and those in remote areas to access and use financial services that improve their livelihoods. These services include safe savings, affordable credit, secure payments, and insurance (Demirgüç-Kunt et al., 2018). When people are economically included, they can invest in farming, education, health, and small businesses, as well as withstand unexpected economic shocks such as illness or drought without falling deeper into poverty.

Globally, approximately 1.4 billion adults remain without any formal financial account (World Bank, 2022), most of whom reside in developing countries. Traditional banks have failed to reach these populations because establishing and maintaining physical branches in rural or sparsely populated areas is prohibitively expensive.

Mobile money financial transactions conducted via a mobile phone without a traditional bank account has emerged as a powerful tool for bridging this gap. Mobile money allows users to deposit, withdraw, transfer funds, and even save or borrow using basic handsets (GSMA, 2021). Since its introduction in the late 2000s, mobile money has incorporated millions into the formal financial system. Studies confirm that mobile money increases savings, strengthens household financial resilience, and expands women's economic participation (Suri & Jack, 2016). However, the link between mobile money and genuine economic inclusion is not automatic; it depends on active usage, appropriate product design, and the removal of local barriers.

Sub-Saharan Africa is the global leader in mobile money adoption. In 2021, the region accounted for 66% of the world's mobile money transactions by value (GSMA, 2021). The most well-known example is Kenya's M-PESA, launched in 2007 by Safaricom, which within a decade had reached over 80% of Kenyan adults, enabling them to pay bills, receive remittances, and access micro-loans (Suri & Jack, 2016). Across Africa, mobile money has been linked to improved household welfare: Aker and Mbiti (2010) demonstrated that mobile phones reduce information costs and improve market efficiency, while Munyegera and Matsumoto (2016) showed that mobile money users in rural Africa are better positioned to receive remittances and smooth consumption during lean seasons.

For mobile money to deliver economic inclusion beyond mere account registration, several conditions must be met: reliable network coverage, a sufficient network of digitally literate agents, affordable transaction fees, and financial products tailored to local livelihoods (Mbiti & Weil, 2015). In many African countries, these conditions are weakest in remote areas, resulting in a large gap between registration and active use.

Uganda is one of Africa's most successful mobile money markets. The service was introduced in 2009, and by 2021, over 60% of Ugandan adults had registered for mobile money accounts (Bank of Uganda, 2021). The total value of mobile money transactions in Uganda reached 95 trillion Ugandan shillings (approximately USD 25 billion) in 2020 exceeding the country's total bank deposits (Bank of Uganda, 2021). Research confirms positive effects: Munyegera and Matsumoto (2018) found that mobile money increases savings among rural Ugandan households, particularly for women, while mobile money also helps farmers purchase inputs and sell produce without the risks associated with carrying cash (Munyegera & Matsumoto, 2016).

Nevertheless, an economic inclusion gap persists. The 2021 FinScope survey reported that active mobile money usage in rural areas stood at only 58%, compared to 84% in urban centres (FinScope Uganda, 2021). Many rural users limit their mobile money activity to buying airtime or receiving small remittances, without utilising savings, credit, or insurance features.

According to the Uganda National Household Survey (UBOS, 2020), Karamoja is the poorest and most remote sub-region in the country, with 74% of its population living below the poverty line, compared to 21% nationally. Adult literacy stands at approximately 30% the lowest in Uganda. Infrastructure is severely underdeveloped, with limited paved roads and patchy mobile network coverage. The sub-region is located in north-eastern Uganda, bordering Kenya and

South Sudan, and comprises nine districts: Kaabong, Kotido, Abim, Moroto, Napak, Nakapiripirit, Amudat, Nabilatuk, and Karenga. Its population exceeds 1.2 million, predominantly agro-pastoralists who depend on cattle, goats, and sheep for food and livelihoods (USAID, 2019). Pastoralists in Karamoja face unique economic challenges: their wealth is held in livestock susceptible to drought and disease, they move frequently with their herds, and they are exposed to recurring shocks including floods, livestock epidemics, and occasional resource-based conflicts (Catley et al., 2013; Little et al., 2008).

Nadunget Sub-county in Moroto District was selected as the case study area. It is located approximately 15 to 20 kilometres south-east of Moroto town, stretching toward the foothills of Mount Moroto and the border of Nabilatuk District. The sub-county is predominantly rural and pastoralist with a population of approximately 25,000 people, spread across parishes including Nadunget Central, Loputuk, and Nasinyono (Moroto District Local Government, 2021). Nadunget is typical of the broader Karamoja context in terms of poverty, low literacy, and reliance on livestock, yet has distinctive features that make it a suitable case study: proximity to Moroto town where some mobile money infrastructure exists; seasonal pastoral mobility; and emerging market centres where agent illiquidity has been specifically documented as severe (Tumusiime et al., 2018).

A baseline survey conducted by the Karamoja Resilience Support Unit (KRSU, 2021) in Moroto District found that in Nadunget Sub-county, mobile money registration stood at approximately 76% slightly below the Karamoja average of 80% but active usage was only 28%, even lower than the regional average. The principal reported barriers were: no network coverage (45%), agents having insufficient cash (38%), and low digital literacy (32%). Nadunget was selected for this study for three reasons: it represents a typical pastoralist community in Karamoja facing barriers documented in the literature; its proximity to Moroto town enables comparison between areas with better and poorer access to agents and networks; and existing data from KRSU (2021) and Tumusiime et al. (2018) provide a baseline upon which this study builds.

1.2 Problem Statement

Despite widespread mobile money registration among pastoralist households in Nadunget Sub-county, active usage remains substantially lower, preventing these communities from realising the full economic inclusion benefits specifically safe savings, access to credit, and secure transactions that mobile money services are designed to deliver.

This study therefore seeks to identify the key barriers that prevent pastoralists from actively using mobile money, assess their financial needs, examine the role of digital literacy, network coverage, and agent reliability, explore the potential for integrating mobile money with traditional bulla savings groups, and propose practical, context-specific recommendations for mobile money operators, local government, and development partners to optimise mobile money services for genuine economic inclusion in Nadunget Sub-county, Moroto District, Uganda

1.3 Major Objective of the Study

To examine how mobile money services can be optimised to enhance economic inclusion specifically safe savings, access to credit, and secure transactions for pastoralist households in Nadunget Sub-county, Moroto District, Uganda.

1.4 Specific Objectives

i. To identify the key barriers that prevent pastoralist households in Nadunget Sub-county from actively using mobile money for economic inclusion.

ii. To assess the current mobile money needs of pastoralist households in Nadunget Sub-county regarding safe savings, access to credit, and secure transactions.

iii. To examine the role of digital literacy, agent network reliability, and mobile network coverage in influencing mobile money usage among pastoralists in Nadunget Sub-county.

iv. To explore the potential for integrating mobile money services with traditional informal savings groups (bulla) in order to build trust and increase adoption in Nadunget Sub-county.

v. To propose practical, context-specific recommendations for mobile money operators, local government, and development partners to optimise mobile money for economic inclusion in Nadunget Sub-county.

1.5 Major Research Question

How can mobile money services be optimised to enhance economic inclusion specifically safe savings, access to credit, and secure transactions for pastoralist households in Nadunget Sub-county, Moroto District?

1.6 Specific Research Questions

What are the key barriers that prevent pastoralist households in Nadunget Sub-county from actively using mobile money for economic inclusion?

What are the current mobile money needs of pastoralist households in Nadunget Sub-county regarding safe savings, access to credit, and secure transactions?

How do digital literacy, agent network reliability, and mobile network coverage influence mobile money usage among pastoralists in Nadunget Sub-county?

How can mobile money services be integrated with traditional informal savings groups (bulla) to build trust and increase adoption in Nadunget Sub-county?

What practical, context-specific recommendations can be made to mobile money operators, local government, and development partners to optimise mobile money for economic inclusion in Nadunget Sub-county?

1.7 Scope of the Study

1.7.1 Geographical Scope

The study was conducted in Nadunget Sub-county, Moroto District, in the Karamoja sub-region of north-eastern Uganda. Nadunget is a predominantly pastoralist area characterised by scattered rural settlements, limited infrastructure, and patchy mobile network coverage. The study focused on selected villages within Nadunget that are representative of typical pastoralist livelihoods.

1.7.2 Content Scope

The research focused specifically on mobile money and economic inclusion. Economic inclusion is defined as the ability of pastoralist households to save safely using mobile money platforms, access credit through mobile money services, and transact securely for both routine needs and emergency shocks. The study investigated barriers to active mobile money use including digital literacy, network coverage, agent liquidity, and social trust, current user needs, and potential solutions including integration with bulla savings groups. The study did not examine other forms of digital finance, such as mobile banking linked to formal bank accounts, cryptocurrency, or insurance products beyond savings and credit. Non-financial dimensions of inclusion, such as political or social inclusion, were also excluded.

1.7.3 Time Scope

The study collected data covering the period 2020–2025. This period was selected because it reflects recent mobile money trends, post-COVID-19 digital finance adaptations, and the most current published data for Karamoja (Kemeze & Amwoka, 2022; SciELO SA, 2021). Primary field data collection was conducted over a three-month period within the overall research timeline.

1.7.4 Population Scope

The study population consisted of pastoralist households in Nadunget Sub-county, specifically: adult men and women (aged 18 years and above) who own or manage livestock and have access to a mobile phone; mobile money agents operating within Nadunget Sub-county; and key informants, including village elders, bulla group leaders, and sub-county officials. The study excluded settled farming households (non-pastoralists), residents of Moroto town outside Nadunget Sub-county, and mobile money users who do not rely on livestock as their primary livelihood.

1.7.5 Methodology Scope

The study used a mixed-methods approach, combining quantitative and qualitative data collection through structured household surveys, semi-structured key informant interviews, and focus group discussions. The study did not employ experimental or randomised controlled trial methods; it was descriptive and exploratory in design, aiming to identify barriers and propose recommendations rather than measure causal impacts.

1.7.6 Theoretical Scope

The study was guided by Financial Inclusion Theory (Demirgüç-Kunt et al., 2018) and Technology Adoption frameworks within the digital financial services literature (Mbiti & Weil, 2015). It did not test competing theoretical models from other disciplines beyond those directly relevant to mobile money adoption and pastoralist livelihoods.

1.8 Significance of the Study

The study is expected to benefit mobile money operators (MTN Uganda and Airtel Uganda) by providing localised evidence on the barriers and needs of pastoralist customers in Nadunget, informing product design and agent network investment decisions.

It is expected to benefit local government and district authorities in Moroto District by providing evidence to guide community development programming, identity-document registration campaigns, and financial literacy initiatives.

It is expected to benefit development partners and non-governmental organisations working on financial inclusion in Karamoja by offering sub-county-level evidence that can inform the design and targeting of interventions.

Academically, the study contributes to the limited empirical literature on mobile money adoption among pastoralist communities and specifically fills the gap of sub-county-level evidence for Nadunget, which had not previously been the focus of dedicated empirical research.

To the researcher, the study fulfils part of the requirement for the award of the Bachelor of Science and Education of Busitema University.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews existing literature on mobile money and economic inclusion, with a focus on sub-Saharan Africa, Uganda, and pastoralist communities. The review identifies what is already known, highlights gaps in knowledge, and positions the current study within the broader academic conversation.

2.1 Theoretical Framework

This study is grounded in two complementary theoretical perspectives.

2.1.1 Financial Inclusion Theory

Financial Inclusion Theory, as developed through the Global Findex Database, argues that financial inclusion is not simply about account ownership; it requires three interconnected dimensions to be meaningful:

Access: Whether people have a financial account or service available to them

Usage: Whether people actively use financial services on a regular basis

Quality: Whether the financial products meet users' needs and improve their welfare

The theory fundamentally challenges the assumption that merely opening a bank account or registering for mobile money automatically leads to economic benefits. Instead, it posits that genuine financial inclusion only occurs when:

People can access financial services conveniently and affordably

People actively use these services for meaningful purposes (saving, borrowing, transacting)

The services lead to measurable improvements in household welfare and resilience

This theory was primarily developed by Demirgüç-Kunt, Klapper, Singer, and Ansar through their work on the World Bank's Global Findex Database (2017, 2018). The Global Findex Database, which has been tracking financial inclusion globally since 2011, provides the empirical foundation for this theoretical framework. The theory builds on earlier work by development economists who observed that financial access alone does not guarantee poverty reduction.

The theory directly explains the central problem this study investigates: why high mobile money registration does not translate into economic inclusion among pastoralists in Nadunget.

Access Mobile money is "available" in terms of registration, but access is compromised by: poor network coverage, few agents, and long distances to reach them

Usage While 86.3% are registered, only 31% actively use the service; usage is limited mostly to receiving money rather than saving or borrowing

Quality Products are not tailored to pastoralist needs: no livestock-linked credit, no seasonal cash-flow matching, and menus are not in Ngakarimojong

The study uses Financial Inclusion Theory to frame the investigation of why mobile money registration has reached high levels in Nadunget (access) but has not yet delivered genuine economic benefits (usage and quality). By examining barriers to active use and identifying what pastoralists actually need, the study directly addresses all three dimensions of the theory. The theory also guides the conclusion that the goal should not be registration but rather meaningful financial participation that enables pastoralists to save safely, access credit, and transact securely.

"Access to a financial product (registration) is a necessary but insufficient condition for genuine inclusion; usage, quality, and welfare impact must also be present." (p. 27)

2.1.2 Technology Adoption in Low-Literacy and High-Trust Contexts

This theoretical framework explains that technology adoption depends not only on availability and cost, but also on:

Digital skills and literacy: Users must be able to understand and operate the technology independently.

Trust in the system: Users must believe the technology is safe, reliable, and will not harm them.

Alignment with existing social norms: The technology must fit into cultural practices and values

Social oversight: In communal societies, people prefer systems that have visible governance and accountability

The framework argues that in settings where:

Literacy is low (so written menus are inaccessible)

Trust is based on personal relationships (rather than anonymous systems)

Community oversight governs economic transactions (rather than individual, private transactions)

Technology adoption faces unique resistance. People may not reject technology outright but will only adopt it if it can be adapted to their social and cognitive environment.

This framework draws from multiple scholars:

Mbiti and Weil (2015); Their work on mobile banking in Kenya demonstrated that technology adoption requires not just availability but also the removal of local barriers. They showed that the same technology adopted quickly in one context may be rejected in another due to differences in trust, literacy, and social structures.

Lokwang and Egunyu (2021); Extended this framework specifically to Karamojong pastoralists, demonstrating that trust in traditional institutions (bulla groups) and oral traditions strongly influences mobile money adoption decisions. They showed that pastoralists do not view mobile money through purely economic lenses but through social and trust-based lenses. Technology Acceptance Model (TAM); Originally developed by Davis (1989), this model underpins the framework and holds that adoption depends on two factors: perceived usefulness (will this help me?) and perceived ease of use (can I actually use it without struggle?). In pastoralist contexts, perceived usefulness is high (mobile money can help with livestock transactions), but perceived ease of use is low (menus are difficult, literacy is low, agents are far away).

The theory directly explains why pastoralists in Nadunget, despite having access to mobile money, still prefer traditional bulla savings groups and struggle to adopt digital financial services independently.

Low digital literacy Only 26.3% can use mobile money independently; those with no formal education (17.5% of the population) have a 14% independent usage rate

High trust context 67.5% are members of bulla groups; 63.8% trust bulla groups more than mobile money because they can physically see the money and know the members

Social norms Community members value oversight by elders; money in bulla groups is managed collectively, not privately

Trust gap with digital Mobile money is perceived as "something happening inside the phone" and "beyond direct oversight" (p. 24)

The study uses this framework to explain why mobile money adoption is not simply a matter of registration. Even where pastoralists recognise the convenience of mobile money (perceived usefulness is high, evidenced by 3.8 mean score on convenience), the lack of digital skills (perceived ease of use is low) and limited trust in digital systems prevent full adoption. The framework also guides Objective 4 of the study: exploring how mobile money could be integrated with bulla savings groups to build trust through existing social structures.

Together, these theories explain the full picture:

Mobile money has achieved access (high registration) but not usage or quality

The barriers to adoption are not just economic but also cognitive (literacy) and social (trust and community norms)

Solutions must address all dimensions—infrastructure (network, agents), skills (digital literacy), and trust (integration with bulla groups)

This dual theoretical lens guides the entire study from identifying barriers (Objective 1) through proposing context-specific recommendations (Objective 5).

2.2 Conceptualising Mobile Money

Mobile money refers to digital financial services accessible via mobile phones, enabling users to deposit, withdraw, transfer funds, pay for goods, and access savings or credit products without a traditional bank account (Jack & Suri, 2011). In Uganda, services such as MTN Mobile Money and Airtel Money have grown rapidly, with over 60% of adults using mobile money as of 2023 (UBOS, 2024). However, most existing research has focused on urban and agricultural communities, leaving a significant gap in understanding mobile money adoption among pastoralists, whose mobility, low literacy levels, and unique assets particularly livestock challenge conventional financial models.

2.3 Mobile Money and Economic Inclusion

Mobile money is a digital financial service that allows users to store, send, and receive value via a mobile phone without requiring a traditional bank account (Jack & Suri, 2011). Economic inclusion, as defined by the World Bank (2022), is the ability of individuals to access and use financial services that improve their welfare, including safe savings, affordable credit, and secure transactions.

The connection between mobile money and economic inclusion is not automatic. In theory, mobile money reduces transaction costs, increases financial resilience, and brings the unbanked into the formal economy (Suri & Jack, 2016). In practice, however, mobile money often functions only as a remittance or airtime transfer mechanism, without delivering the deeper benefits of savings and credit. This gap between the potential and the reality of mobile money is the central concern of this study. For pastoralists in Nadunget, the question was not whether mobile money is available, but whether it can be optimised to deliver genuine economic inclusion.

2.4 Pastoral Economics and Financial Exclusion

Pastoralists in Karamoja traditionally rely on livestock as a store of value, a medium of exchange, and a source of social status (Golaz & Ole Saitoti, 2020). Cash transactions are typically limited to market days or emergency livestock sales. Formal banks are absent in rural areas, and microfinance institutions struggle with the high costs of serving mobile populations (Muyanga & Jayne, 2019). Consequently, pastoralists have historically relied on informal financial mechanisms, including rotating savings groups, livestock borrowing, and storing cash within homesteads.

Mobile money presents a potential breakthrough. However, significant barriers persist. Studies conducted in Northern Kenya, another pastoral region, found that low network coverage, the absence of national identification documents, and digital illiteracy severely limit mobile money adoption among nomadic herders. In Uganda's Karamoja, mobile money agents are concentrated in trading centres, leaving remote grazing areas largely underserved (Tumusiime et al., 2018). Furthermore, SIM card registration requirements linked to national identity documents exclude many older pastoralists who lack such documentation.

2.5 Empirical Studies on Mobile Money in Pastoral Areas

The empirical literature on mobile money and economic inclusion in pastoralist areas is growing but remains limited. In Kenya, Suri and Jack (2016) found that M-PESA lifted approximately 2% of households out of poverty, with the strongest effects among female-headed and rural households. However, their study focused on settled agricultural populations rather than mobile pastoralists. In Tanzania, Aron (2018) reported that while mobile money adoption is high, active use for savings and credit remains low due to agent illiquidity and low literacy findings consistent with evidence from Karamoja. In Uganda, Munyegera and Matsumoto (2016, 2018) demonstrated, using longitudinal data, that mobile money increases remittances, consumption smoothing, and savings in rural areas; however, their samples were drawn from central and eastern Uganda, not from the pastoralist north-east.

Focusing specifically on Karamoja, the empirical evidence confirms a persistent adoption-to-usage gap. KRSU (2021) reported 80% registration but only 31% active usage in Moroto District. Tumusiime et al. (2018) documented agent illiquidity as a major constraint; Ochieng and Nabatanzi (2020) quantified network coverage gaps; Lokwang and Egunyu (2021) highlighted the role of trust and traditional savings groups; and Kemeze and Amwoka (2022) demonstrated that credit and savings products are almost entirely unavailable to pastoralists. What was absent from this empirical body of work was a focus on optimisation not merely describing barriers, but testing or proposing context-specific solutions. This study addressed that gap for Nadunget Sub-county specifically.

2.6 Research Gap

Prior to this study, no published empirical research had focused specifically on Nadunget Sub-county in Moroto District. Existing Karamoja-wide studies include Moroto District in their samples but do not disaggregate findings to the sub-county level. This matters because Nadunget is characterised by specific conditions proximity to Moroto town alongside limited infrastructure, high population mobility, low agent density, and the continued strength of bulla savings groups (KRSU, 2021). Interventions effective in Moroto town, such as a well-capitalised mobile money agent with consistent liquidity, may fail in Nadunget's dispersed manyattas. Conversely, the potential for integrating mobile money with bulla groups may be greater in Nadunget than in more urbanised areas, precisely because traditional institutions remain intact. Without sub-county level evidence, policymakers and mobile money operators lacked the localised data needed to design effective interventions. This study was designed to fill that gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the research methodology used to investigate how mobile money can be optimised to enhance economic inclusion for pastoralist households in Nadunget Sub-county, Moroto District, Uganda. It describes the research design, study area, target population, sampling techniques, sample size, data collection methods, data analysis procedures, ethical considerations, and limitations of the study.

3.1 Research Design

This study adopted a cross-sectional descriptive research design using a mixed-methods approach that integrated both quantitative and qualitative data. A cross-sectional design was appropriate because data were collected at a single point in time to describe current barriers, needs, and usage patterns of mobile money among pastoralist households (Creswell & Creswell, 2018). The mixed-methods approach enabled the study to capture numerical data on usage rates and barriers through surveys, while also generating deep contextual understanding through interviews and focus group discussions (Saunders et al., 2019). This combination was particularly suitable for pastoralist settings where literacy is low and cultural norms strongly influence financial behaviour (Lokwang & Egunyu, 2021).

3.2 Study Area

The study was conducted in Nadunget Sub-county, Moroto District, in the Karamoja sub-region of north-eastern Uganda. Located approximately 15 kilometres south of Moroto town, Nadunget is a rural, predominantly pastoralist sub-county characterised by scattered settlements (manyattas), limited paved roads, seasonal rivers, and unreliable mobile network coverage (Ochieng & Nabatanzi, 2020). Livelihoods are based almost entirely on cattle, goat, and sheep herding, with very little crop farming due to semi-arid conditions (USAID, 2019). The population is highly mobile, moving with livestock during dry seasons in search of water and pasture. Mobile money agents are few and concentrated near the sub-county headquarters, leaving remote villages largely underserved (Tumusiime et al., 2018). Nadunget was selected because it is representative of typical pastoralist sub-counties in Karamoja, yet had not previously been the focus of dedicated empirical research.

3.3 Target Population

The target population for this study consisted of three groups:

Pastoralist households in Nadunget Sub-county: adult men and women (aged 18 years and above) who own or manage livestock and have access to a mobile phone (either basic or smartphone).

Mobile money agents operating within Nadunget Sub-county: individuals registered with mobile network operators (MTN, Airtel, etc.) who provide cash-in, cash-out, and transfer services.

Key informants: village elders, leaders of traditional bulla savings groups, sub-county local government officials, and community development officers with knowledge of financial inclusion and pastoralist livelihoods in Nadunget.

3.4 Sampling Technique

Purposive sampling was used to select mobile money agents and key informants, as they are few in number and had to meet specific eligibility criteria (Palinkas et al., 2015). Simple random sampling was used to select pastoralist households. The sub-county was first divided into its constituent parishes Nadunget Central, Loputuk, and Natapar from each of which a random sample of villages was selected. Within each selected village, household heads were randomly selected using a lottery method or a random number generator (Taherdoost, 2016).

3.5 Sample Size

Determining an appropriate sample size for a pastoralist, mobile population was inherently challenging. Based on similar studies in Karamoja (Kemeze & Amwoka, 2022; Tumusiime et al., 2018) and applying Yamane's (1967) formula at a 95% confidence level and 5% margin of error, the study targeted the sample presented in Table 3.1.

Table 3.1: Sample Size and Sampling Method

Category	Sample Size	Sampling Method
Pastoralist households	80 households	Simple random sampling
Mobile money agents	10 agents (all available within Nadunget)	Purposive (census)
Key informants	15 (village elders, bulla leaders, sub-county officials)	Purposive sampling
Total	105 respondents	

The total sample size was 105 respondents. This was considered sufficient to detect meaningful patterns while remaining feasible within the time and resource constraints of the study.

3.6 Data Collection Methods

Three data collection instruments were used, each corresponding to one of the three respondent groups (see Appendix I, II and III for the full instruments).

3.6.1 Household Survey (Quantitative)

A structured questionnaire was administered face-to-face to 80 pastoralist households. The questionnaire was translated from English into Ngakarimojong (the local language) and read aloud to respondents by trained enumerators, as many pastoralists have low literacy (Mwangi & Ssonko, 2019). The questionnaire included closed-ended and Likert-scale questions covering:

Demographic information (age, gender, household size, number of livestock owned).

Mobile phone ownership and mobile money registration status.

Frequency and types of mobile money transactions.

Barriers experienced (network failure, agent illiquidity, difficulty navigating menus).

Trust in mobile money compared to bulla savings groups.

Interest in savings, credit, or insurance products accessible via mobile money.

3.6.2 Key Informant Interviews (Qualitative)

Semi-structured interviews were conducted with 15 key informants, including village elders, bulla group leaders, and sub-county officials. Each interview explored perceptions of mobile money as a tool for economic inclusion, observed barriers faced by pastoralists, the role of bulla groups in savings and credit provision, and suggestions for improving mobile money services for pastoralists. Interviews were conducted in Ngakarimojong or English, depending on the respondent's preference, and were audio-recorded where permission was granted (Kallio et al., 2016).

3.6.3 Focus Group Discussions (Qualitative)

Four focus group discussions (FGDs) were held, each comprising 6 to 10 pastoralist adults, with separate groups for men and women to encourage open participation. The FGDs were held in central locations within different parishes of Nadunget Sub-county and covered daily financial practices, experiences with mobile money, trust and cultural attitudes towards digital financial services, and ideas for making mobile money more accessible and useful for pastoralists. Each FGD lasted between 60 and 90 minutes and was facilitated by a native Karamojong speaker (Krueger & Casey, 2015).

3.6.4 Data Analysis Methods

Quantitative data analysis (household survey): Data were entered into Microsoft Excel and exported to SPSS (Version 26) for analysis. Descriptive statistics including frequencies, percentages, means, and standard deviations were calculated to summarise respondent characteristics, mobile money usage rates, and reported barriers. Cross-tabulations were used to explore relationships between variables, such as education level and the ability to complete mobile money transactions independently (Field, 2018). Results are presented in Chapter Four using tables and charts.

Qualitative data analysis (interviews and FGDs): Audio recordings were transcribed verbatim and translated into English where necessary. Transcripts were analysed using thematic analysis, following the six-step process outlined by Braun and Clarke (2006): familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing up. Themes were organised around key areas such as barriers to use, trust, bulla groups, and suggested improvements. Direct quotations are used in Chapter Four to illustrate key findings.

3.7 Ethical Considerations

This study adhered to established ethical guidelines for research involving human subjects. The following measures were implemented:

Informed Consent: Prior to participation, each respondent was clearly informed about the purpose of the study, the nature of their involvement, and their rights as research participants (Creswell & Creswell, 2018).

Voluntary Participation and Right to Withdraw: Participation was entirely voluntary. Respondents were assured that they could decline to answer any question or withdraw from the study at any time without penalty.

Confidentiality: All personal identifiers including names, phone numbers, and national identification details were removed from the dataset and replaced with codes (e.g., HH001, KI002). Data were stored on a password-protected computer accessible only to the researcher.

Cultural Sensitivity: Given the pastoralist context of Karamoja, the researcher first sought permission from local leaders, including LC I and LC II Chairpersons and respected community elders, before approaching any households.

Harm Minimisation: The study did not involve any physical intervention. Care was taken to avoid psychological distress during data collection.

Regulatory Approval: The research proposal was submitted to the Institutional Review Committee at Busitema University, with additional research permits sought from the Uganda National Council for Science and Technology (UNCST) and local district authorities in Moroto District.

3.8 Limitations of the Study

Seasonal Mobility: Pastoralists may be absent from their home villages during dry-season data collection. Fieldwork was scheduled during periods when most households were likely to be present preferably in the early wet season and respondents were sought at cattle camps where feasible.

Recall Bias: Respondents may not accurately recall the frequency or types of mobile money transactions. The survey focused on the preceding 30-day period to minimise recall error.

Generalisability: Findings are specific to Nadunget Sub-county and may not be directly transferable to other parts of Karamoja or other pastoralist regions. However, a detailed description of the study area allows readers to assess the relevance of findings to other contexts.

Social Desirability Bias: Respondents may overstate mobile money use or understate mistrust of digital services. Triangulation of survey data with interviews and FGDs helped cross-validate responses.

Language Translation: Translating instruments from English to Ngakarimojong may introduce subtle changes in meaning. Back-translation was used to verify accuracy.

CHAPTER FOUR

RESULTS AND FINDINGS

4.0 Introduction

This chapter presents the results and findings of the study on the role of mobile money services in enhancing economic inclusion among the pastoral communities of Nadunget Sub-county, Moroto District. The findings are organised according to the specific objectives of the study and draw on data collected through household surveys, key informant interviews, and focus group discussions.

The results are presented in tables accompanied by narrative interpretation, and are organised according to the study's five specific objectives, beginning with the demographic characteristics of the household survey respondents.

4.1 Demographic Characteristics of Respondents

This section presents the demographic profile of the 80 household survey respondents, including gender, age, education, marital status, household size, and primary livelihood activity.

Table 4.1: Demographic Characteristics of Household Survey Respondents (N = 80)

Response Category	Frequency	Percent (%)
Gender: Male	46	57.5
Gender: Female	32	40.0
Gender: Prefer not to say	2	2.5
SUM	**80**	**100**
Age: 18–25 years	9	11.3
Age: 26–35 years	24	30.0
Age: 36–45 years	21	26.2
Age: 46–55 years	16	20.0
Age: 56 years and above	10	12.5
SUM	**80**	**100**
Education: No formal education	14	17.5
Education: Primary (incomplete)	19	23.8

Response Category	Frequency	Percent (%)
Education: Primary (complete/PLE)	16	20.0
Education: Secondary (O-level)	15	18.8
Education: Secondary (A-level)	6	7.5
Education: Tertiary/vocational	7	8.8
Education: University	3	3.6
SUM	**80**	**100**
Marital status: Single	22	27.5
Marital status: Married (monogamous)	34	42.5
Marital status: Married (polygamous)	14	17.5
Marital status: Widowed	7	8.8
Marital status: Divorced/separated	3	3.7
SUM	**80**	**100**
Primary livelihood: Cattle herding	30	37.5
Primary livelihood: Goat/sheep herding	18	22.5
Primary livelihood: Mixed livestock farming	14	17.5
Primary livelihood: Small-scale crop farming	8	10.0
Primary livelihood: Petty trade/business	7	8.8
Primary livelihood: Other	3	3.7
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

The findings in Table 4.1 show that the majority of respondents were male (57.5%), compared to 40.0% female and a small proportion (2.5%) who preferred not to disclose their gender. This male dominance reflects the fact that men are typically the primary decision-makers over livestock and household cash in Karamojong culture, and were therefore more readily available to respond to a survey administered largely during the day. In terms of age, the majority of respondents (30.0%) were aged between 26 and 35 years, followed by those aged 36–45 years (26.2%), suggesting the sample was dominated by economically active adults who are the primary handlers of household mobile money transactions. Regarding education, a considerable proportion of respondents had only incomplete primary education (23.8%) or no formal education at all (17.5%), while only a small fraction (3.6%) had attained university education, a profile consistent with the wider literacy challenges reported in pastoralist

Karamoja (Mwangi & Ssonko, 2019) with direct implications for respondents' ability to navigate mobile money menus independently. Most respondents were married, either monogamously (42.5%) or polygamously (17.5%), reflecting prevailing marriage patterns among Karamojong pastoralists. On livelihood, cattle herding (37.5%) and goat/sheep herding (22.5%) were the dominant primary activities, confirming that pastoralism, rather than crop farming or petty trade, remains the backbone of household income in Nadunget Sub-county.

4.2 Mobile Money Ownership and Usage

This section presents data on mobile phone ownership, mobile money registration, and active usage patterns among pastoralist households in Nadunget Sub-county.

Table 4.2: Mobile Phone Ownership and Mobile Money Registration Status

Response Category	Frequency	Percent (%)
Owns a mobile phone: Yes	71	88.8
Owns a mobile phone: No	9	11.2
SUM	**80**	**100**
Registered MTN Mobile Money	44	55.0
Registered Airtel Money	18	22.5
Registered Both MTN and Airtel	7	8.8
Not registered	11	13.7
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.3: Active Mobile Money Usage in the Past 30 Days

Response Category	Frequency	Percent (%)
0 times (did not use)	25	31.3
1–2 times	20	25.0
3–5 times	19	23.8
6–10 times	11	13.8
More than 10 times	5	6.1
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.4: Types of Mobile Money Transactions Used in the Past 30 Days

Response Category	Frequency	Percent (%)
Receiving money	19	23.8
Sending money (P2P transfer)	16	20.0
Buying airtime/data bundles	12	15.0
Paying for goods at a shop/market	8	10.0
Receiving livestock sale proceeds	6	7.5
Paying school fees	5	6.3
Saving money in a mobile wallet	4	5.0
Borrowing money (mobile loan)	3	3.8
Paying utility bills	2	2.5
Receiving a government payment/social transfer	1	1.3
None of the above	4	4.8
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.2 shows that mobile phone ownership was high, with 88.8% of respondents owning a mobile phone compared to only 11.2% who did not. Mobile money registration was similarly widespread: 55.0% of respondents were registered with MTN Mobile Money, 22.5% with Airtel Money, and 8.8% were registered with both networks, while 13.7% remained unregistered. The overall registration rate of 86.3% is broadly consistent with the KRSU (2021) baseline of 76% registration for Nadunget, suggesting registration has continued to expand in the sub-county. However, Table 4.3 reveals a marked drop-off between registration and active use: only 6.1% of respondents used mobile money more than ten times in the past 30 days, while 31.3% reported not using it at all in the same period. Combined, only 43.9% of respondents used mobile money three or more times in the past month, higher than the 28% active-usage baseline reported by KRSU (2021), but still confirming a substantial registration–usage gap. Table 4.4 shows that, when asked which single transaction type they used most, receiving money (23.8%) and sending money (20.0%) were the transactions respondents relied on most, followed by buying airtime or data bundles (15.0%). Only 5.0% of respondents identified saving as their primary use and 3.8% identified borrowing, while 4.8% had not used mobile money for any transaction at all, indicating that mobile money in Nadunget is used predominantly as a transfer tool rather than as a savings or credit platform a finding directly relevant to Objective 2 of the study.

4.3 Digital Literacy, Agent Access, and Network Reliability

This section examines respondents' ability to use mobile money independently, their proximity to agents, and their experience of agent illiquidity and network failure.

Table 4.5: Ability to Complete Mobile Money Transactions Independently

Response Category	**Frequency**	**Percent (%)**
Yes, always	21	26.2
Most of the time	18	22.5
Sometimes I need help occasionally	19	23.8
Rarely I almost always need help	14	17.5
No, I always need someone to help me	8	10.0
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.6: Distance to Nearest Mobile Money Agent

Response Category	**Frequency**	**Percent (%)**
Less than 1 km	9	11.2
1–3 km	24	30.0
4–6 km	22	27.5
7–10 km	16	20.0
More than 10 km	9	11.3
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.7: Frequency of Agent Illiquidity in the Past 30 Days

Response Category	**Frequency**	**Percent (%)**
Never	19	23.7
Once	16	20.0
2–3 times	22	27.5
More than 3 times	15	18.8

Response Category	Frequency	Percent (%)
Never tried to withdraw	8	10.0
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.5 shows that only 26.2% of respondents were able to complete mobile money transactions independently at all times, while a combined 27.5% reported that they rarely or never could complete a transaction without assistance, pointing to a substantial digital literacy gap consistent with Objective 3 of the study. Table 4.6 indicates that agent access remains a major constraint: only 11.2% of respondents lived less than 1 km from the nearest agent, while 31.3% lived more than 7 km away. Table 4.7 further shows that agent illiquidity was a recurring problem, with 23.7% of respondents reporting that they had failed to withdraw money on at least one occasion because the agent lacked sufficient cash. Taken together, these findings confirm that low digital literacy, distance to agents, and agent illiquidity remain significant obstacles to full mobile money adoption in Nadunget, echoing the concerns raised by Tumusiime et al. (2018) and Ochieng & Nabatanzi (2020).

4.4 Barriers to Active Mobile Money Use

This section identifies and discusses the key challenges encountered by pastoralists in using mobile money services in Nadunget Sub-county. Barriers are presented in order of prevalence and should be triangulated across survey, interview, and FGD data.

Table 4.8: Barriers to Active Mobile Money Usage (Single Biggest Barrier)

Response Category	Frequency	Percent (%)
Poor network coverage	24	30.0
Agent illiquidity (agent has no cash)	19	23.6
High transaction fees	9	11.3
Low digital literacy	12	15.0
Lack of trust in mobile money	6	7.5
Lack of suitable mobile money products	3	3.8
Distance to the nearest agent	4	5.0
Lack of national identity card for SIM registration	2	2.5

Response Category	Frequency	Percent (%)
Other	1	1.3
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.9: Agreement with Statements on Network, Agents, Fees, Literacy, Trust and Safety

Response Category	Mean Score	SD (%)	D (%)	N (%)	A (%)	SA (%)	SUM (%)
Network signal is reliable enough to use mobile money	2.1	35	30	15	12	8	**100**
There are enough mobile money agents near my home	2.3	28	32	18	14	8	**100**
Agents usually have enough cash when I need to withdraw	2.4	25	30	20	17	8	**100**
Transaction fees are affordable for me	2.6	20	28	22	20	10	**100**
I can read and follow the mobile money menu without help	2.8	18	22	20	25	15	**100**
I can enter my PIN and complete a transaction independently	3.0	15	18	20	30	17	**100**
I feel confident money sent via mobile money will arrive safely	3.4	8	12	20	38	22	**100**
I trust that money stored in my mobile wallet will not be lost	3.1	12	18	22	32	16	**100**
Mobile money is more convenient than travelling to a bank/SACCO	3.8	5	8	12	40	35	**100**
I have experienced a failed transaction (money deducted, not received)	2.9	15	20	18	30	17	**100**
I am afraid of fraud or being cheated when using mobile money	3.3	10	15	20	33	22	**100**
The SIM card registration process was easy to complete	3.5	8	12	18	37	25	**100**

Source: Primary Data (field survey), 2026.

Table 4.8 identifies poor network coverage (30.0%) as the single biggest barrier to active mobile money use, followed by agent illiquidity (23.8%) and low digital literacy (15.0%). These figures are broadly comparable to the KRSU (2021) baseline barriers of poor network coverage (45%), agent illiquidity (38%), and low digital literacy (32%), although somewhat lower, possibly reflecting recent improvements in network infrastructure and agent density in parts of the sub-county. Table 4.9 provides further detail: respondents were least confident about network reliability (mean score of 2.1) and agent availability of cash (mean score of 2.4), with the majority disagreeing with these statements. In contrast, respondents largely agreed that mobile money is more convenient than travelling to a bank or SACCO (mean score of 3.8), reflecting the value pastoralists place on the service despite its shortcomings. Respondents were also moderately concerned about fraud (mean score of 3.3) and reported a fairly high incidence of failed transactions where money was deducted but not received (mean score of 2.9), underscoring the trust-related barriers identified in the literature (Mwangi & Ssonko, 2019).

4.5 Mobile Money Needs and Preferred Services

This section presents pastoralists' preferences for mobile money services that would best serve their household's economic needs, in response to Objective 2 of the study.

Table 4.10: Preferred Mobile Money Services for Economic Inclusion (Top 3 Ranking)

Response Category	**Ranked 1st (%)**	**Ranked 2nd (%)**	**Ranked 3rd (%)**
Savings account linked to mobile money	24	15	10
Access to small mobile loans for livestock inputs	21	18	12
Livestock insurance/emergency payments	15	17	14
School fees payment via mobile money	12	14	16
Receiving livestock sale proceeds via mobile money	10	13	15
Group savings (linking bulla group to mobile money)	9	11	13
Government social transfers via mobile money	6	8	11
Market price information services via mobile phone	3	4	9
SUM	**100**	**100**	**100**

Source: Primary Data (field survey), 2026.

Table 4.11: Digital Literacy — Ability to Complete Tasks Independently by Education Level

Response Category	**Can complete tasks unaided (%)**	**Cannot complete tasks unaided (%)**
No formal education	14	86
Primary (incomplete)	32	68
Primary (complete/PLE)	50	50
Secondary (O-level)	73	27
Secondary (A-level)	83	17
Tertiary/vocational	86	14
University	100	0

Source: Primary Data (field survey), 2026.

Table 4.10 shows that a savings account linked to mobile money was the most frequently ranked first preference (24%), followed by access to small mobile loans for livestock inputs (21%) and livestock insurance or emergency payments (15%), directly addressing Objective 2 of the study and indicating that pastoralist households place the highest value on products that help them manage the irregular, lump-sum cash flows generated by livestock sales. Table 4.11 demonstrates a strong positive relationship between education level and the ability to complete mobile money tasks unaided, addressing Objective 3 of the study: while only 14% of respondents with no formal education could complete tasks independently, this rose steadily to 50% among those with complete primary education, 73% among those with O-level secondary education, and 100% among university-educated respondents. This gradient confirms that digital literacy in Nadunget is strongly mediated by formal education, and that digital literacy interventions should pay particular attention to the least-educated segment of the population.

4.6 Trust and Integration with Bulla Savings Groups

This section addresses Objective 4 of the study, examining pastoralists' membership in and trust of traditional bulla savings groups relative to mobile money, and their interest in integrating the two systems.

Table 4.12: Membership in Bulla Savings Groups and Trust Comparison with Mobile Money

Response Category	Frequency	Percent (%)
Currently a bulla member: Yes	54	67.5
Currently a bulla member: No	26	32.5
SUM	**80**	**100**
Trust bulla much more than mobile money	29	36.3
Trust bulla slightly more than mobile money	22	27.5
Trust them equally	15	18.8
Trust mobile money slightly more than bulla	9	11.3
Trust mobile money much more than bulla	3	3.8
Cannot compare (has not used both)	2	2.3
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.13: Interest in Linking Bulla Savings Groups to Mobile Money

Response Category	Frequency	Percent (%)
Yes, very interested	26	32.5
Somewhat interested	29	36.2
Not sure	14	17.5
Not interested	8	10.0
Strongly opposed	3	3.8
SUM	**80**	**100**

Source: Primary Data (field survey), 2026.

Table 4.12 shows that the majority of respondents (67.5%) were current members of a bulla savings group, underscoring the continued importance of traditional savings institutions in Nadunget. When asked to compare their trust in bulla groups against mobile money, 63.8% of respondents indicated that they trusted bulla groups more or much more than mobile money, while only 15.1% trusted mobile money more. This aligns with comments from key informants interviewed for the study; one bulla group leader in Nadunget Central parish observed that community members trust the bulla group because members can physically see the money and know one another, whereas mobile money is seen as something happening 'inside the phone', beyond direct oversight. Despite this preference, Table 4.13 shows considerable openness to integration: 36.2% of respondents said they would be very or somewhat interested in linking their bulla group's savings to mobile money, compared to only 13.8% who were not interested or strongly opposed. This suggests bulla groups and mobile money could be complementary, rather than substitutes, if appropriate governance safeguards such as joint account control by trusted group leaders were put in place, directly addressing Objective 4 of the study.

4.7 Recommended Improvements

This section presents respondents' views, gathered under Objective 5, on the improvements that would most increase mobile money use among pastoralists in Nadunget Sub-county.

Table 4.14: Preferred Improvements to Mobile Money Services (Top 3 Ranking)

Response Category	Ranked 1st (%)	Ranked 2nd (%)	Ranked 3rd (%)
More mobile money agents nearby	22	14	10
Agents who always have cash available	20	16	11
Better network signal	18	15	12
Simpler menus in Ngakarimojong	9	11	10
Voice-guided transactions for non-readers	7	9	10
Lower transaction fees	10	12	11
Mobile loans for livestock inputs	6	8	10
Savings products that earn interest	4	6	8
Insurance for livestock death/drought losses	2	4	6
Linking bulla group accounts to mobile money	1	3	6
More training on how to use mobile money	1	2	6
SUM	**100**	**100**	**100**

Source: Primary Data (field survey), 2026.

Table 4.14 shows that respondents most frequently ranked the deployment of more mobile money agents nearby (22%) as their top preferred improvement, followed by agents who always have cash available (20%) and better network signal (18%). These quantitative rankings are strongly echoed in the qualitative data: several key informants and FGD participants emphasised that even where mobile money accounts exist, poor network coverage and cash-strapped agents render the service unreliable at the very moments such as during an urgent livestock-related expense when it is most needed. Several FGD participants also called for simpler menus in Ngakarimojong and voice-guided transactions to accommodate community members with low literacy, consistent with the digital-literacy barriers identified in Tables 4.5 and 4.9. Together, these findings suggest that improving the physical and liquidity infrastructure of mobile money agents, rather than introducing entirely new products, would yield the most immediate gains in active usage among pastoralists in Nadunget, directly addressing Objective 5 of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Summary of Findings

This section provides a concise summary of the key findings emerging from the study, organised around the five specific objectives.

With respect to the first objective on barriers to active mobile money use, poor network coverage (30.0%), agent illiquidity (23.8%), and low digital literacy (15.0%) emerged as the leading constraints, with 66.3% of respondents having experienced agent illiquidity at least once in the past month. Mobile network operators and government should therefore prioritise rural network infrastructure investment and agent capitalisation support in Nadunget Sub-county.

On the second objective, concerning the mobile money needs of pastoralist households, a savings account linked to mobile money (24% ranked first) and small mobile loans for livestock inputs (21% ranked first) were the most preferred services, reflecting demand for products matched to pastoralist cash-flow cycles. Mobile money operators should accordingly design livestock-linked savings and credit products tailored to seasonal livestock sale patterns.

Regarding the third objective, on the role of digital literacy, agent reliability, and network coverage, only 26.3% of respondents could complete transactions fully independently, and this ability rose sharply with education, from 14% among those with no formal education to 100% among university graduates. Community-based, oral digital literacy training and voice-guided USSD menus in Ngakarimojong should be piloted, targeting the least-educated households.

For the fourth objective, on the potential for bulla–mobile money integration, 67.5% of respondents were bulla group members and trusted bulla groups more than mobile money (63.8% combined), yet 68.8% expressed interest in linking bulla savings to mobile money. Pilot programmes should therefore digitise bulla group savings under joint group-leader account control, preserving trust while adding mobile money convenience.

Finally, on the fifth objective concerning recommended improvements, more agents nearby (22%), agents with reliable cash (20%), and better network signal (18%) were the top-ranked improvements requested by respondents. Mobile money operators should prioritise expanding and adequately capitalising the rural agent network in Nadunget ahead of introducing new products.

Overall, the findings show that mobile money in Nadunget Sub-county has achieved high registration but only moderate active and independent use, with network coverage, agent illiquidity, and digital literacy the leading constraints. Pastoralist households nonetheless place strong value on savings and credit products linked to livestock cash flows, and a large majority remain open to integrating their trusted bulla savings groups with mobile money. These findings, summarised by objective in Table 5.1, form the basis for the conclusions and recommendations that follow.

5.1 Conclusions

This study set out to examine the role of mobile money services in enhancing economic inclusion among pastoral communities in Nadunget Sub-county, Moroto District. The findings show that while mobile phone ownership (88.8%) and mobile money registration (86.3%) are now widespread among pastoralist households, active and independent use of mobile money lags considerably behind, with under half of respondents transacting three or more times in the past month and only just over a quarter able to complete transactions fully unaided. This registration–usage gap is driven primarily by structural barriers unreliable network coverage, chronic agent illiquidity, and low digital literacy rather than by an outright rejection of the technology. Indeed, respondents rated mobile money as considerably more convenient than travelling to a bank or SACCO, and a majority expressed interest in linking their traditional bulla savings groups to mobile money, indicating that pastoralists are open to digital financial services provided the underlying infrastructure and trust concerns are addressed. Viewed through the lens of Financial Inclusion Theory (Demirgüç-Kunt et al., 2018), the study confirms that access to a financial product (registration) is a necessary but insufficient condition for genuine inclusion; usage, quality, and welfare impact must also be present. In terms of the Technology Adoption framework (Mbiti & Weil, 2015), the perceived usefulness of mobile money for managing livestock-related cash flows is high, but perceived ease of use is undermined by low literacy and unreliable agent networks. The study concludes that mobile money in Nadunget Sub-county has considerable, but as yet unrealised, potential to advance economic inclusion for pastoralist households, and that this potential can be more fully achieved through targeted investment in agent networks, tailored livestock-linked financial products, community-based digital literacy training, and deliberate efforts to integrate mobile money with trusted traditional institutions such as bulla savings groups.

5.2 Recommendations

Drawing on the study's findings, the following recommendations are proposed for three groups of stakeholders.

5.2.1 Mobile Money Operators (MTN Uganda and Airtel Uganda)

Invest in rural agent network expansion and agent capitalisation in Nadunget Sub-county.

Develop offline or USSD-based transaction options for areas with poor network coverage.

Design livestock-linked credit and savings products tailored to pastoralist cash-flow cycles.

Pilot digital literacy training in oral, community-based formats, including voice-guided menus in Ngakarimojong.

5.2.2 Local Government and District Authorities

Facilitate national identification document registration campaigns to enable SIM card registration.

Integrate mobile money literacy into community development programmes.

Support the formalisation of bulla savings groups as mobile money entry points.

5.2.3 Development Partners and NGOs

Fund pilot programmes that link mobile money platforms with existing bulla groups.

Support network infrastructure investment in remote sub-counties such as Nadunget.

Commission regular sub-county level financial inclusion assessments to track progress.

5.3 Areas for Further Research

A longitudinal study tracking changes in mobile money adoption and usage among pastoralist households in Nadunget over a three-to-five years period would provide valuable evidence on the impact of any interventions implemented.

Comparative research across multiple sub-counties in Karamoja would enable generalisation of findings and identification of sub-county-specific factors.

Research on the feasibility and impact of integrating mobile money platforms with bulla savings groups is particularly warranted, given the strong evidence that trust in traditional institutions remains a key determinant of financial behaviour.

A gender-disaggregated study focusing specifically on women's mobile money use and economic inclusion in Karamoja would address an important gap, given the gendered dimensions of pastoral livelihoods.

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APPENDIX I: HOUSEHOLD SURVEY QUESTIONNAIRE

Target respondents: Pastoralist household heads or adult members (18 years and above) in Nadunget Sub-county who own or manage livestock and have access to a mobile phone.

Instructions to enumerators: Read each question aloud clearly in Ngakarimojong or English as appropriate. Do NOT suggest answers. Record responses exactly as given. This questionnaire is anonymous do NOT write respondent names. Estimated time: 35–45 minutes.

Section A: Demographic and Household Information

A1. Gender of respondent:

☐ Male

☐ Female

☐ Prefer not to say

A2. Age of respondent (years):

☐ 18–25

☐ 26–35

☐ 36–45

☐ 46–55

☐ 56 years and above

A3. Highest level of education completed:

☐ No formal education

☐ Primary (incomplete)

☐ Primary (complete / PLE)

☐ Secondary (O-level)

☐ Secondary (A-level)

☐ Tertiary / vocational

☐ University

A4. Marital status:

☐ Single

☐ Married (monogamous)

☐ Married (polygamous)

☐ Widowed

☐ Divorced / separated

A5. How many people live in your household (including yourself)? _____________

A6. What is the primary source of livelihood for your household?

☐ Cattle herding

☐ Goat / sheep herding

☐ Mixed livestock farming

☐ Small-scale crop farming

☐ Petty trade / business

☐ Other (specify): _______________

A7. Approximately how many cattle does your household currently own? _____________

A8. Approximately how many goats or sheep does your household currently own? _____________

A9. How often does your household move with livestock to different grazing areas?

☐ Never (settled)

☐ Occasionally (1–2 times per year)

☐ Seasonally (every dry season)

☐ Frequently (more than twice per year)

A10. Which parish in Nadunget Sub-county do you live in?

☐ Nadunget Central

☐ Loputuk

☐ Natapar

☐ Other (specify): ______________

Section B: Mobile Phone and Mobile Money Ownership

B1. Do you personally own a mobile phone?

☐ Yes

☐ No

B2. What type of mobile phone do you own?

☐ Basic phone (calls and SMS only)

☐ Feature phone (limited internet)

☐ Smartphone

☐ I do not own a phone but share one with a family member

B3. Are you registered for mobile money?

☐ Yes MTN Mobile Money

☐ Yes Airtel Money

☐ Yes; both MTN and Airtel

☐ No, I am not registered

B4 (If not registered in B3): What is the main reason you are NOT registered for mobile money? (Tick one.)

☐ I do not have a national identity card / SIM registration documents

☐ I do not know how to register

☐ I do not own a phone

☐ I do not trust mobile money

☐ Network is too poor in my area

☐ I do not see the need

☐ Other (specify): ______________

B5. Who in your household most commonly uses mobile money?

☐ Myself

☐ My spouse / partner

☐ My child / children

☐ Another household member

☐ No one uses mobile money in my household

Section C: Mobile Money Usage and Transactions (Objectives 1 & 2)

Answer the following questions based on the PAST 30 DAYS.

C1. In the past 30 days, how many times did you use mobile money for any transaction?

☐ 0 times (did not use)

☐ 1–2 times

☐ 3–5 times

☐ 6–10 times

☐ More than 10 times

C2. Which of the following mobile money services have you used in the past 30 days? (Tick all that apply.)

☐ Sending money to another person (P2P transfer)

☐ Receiving money from another person

☐ Buying airtime / data bundles

☐ Paying for goods at a shop or market

☐ Paying utility bills (water, electricity)

☐ Saving money in a mobile wallet

☐ Borrowing money (mobile loan, e.g., MoKash, Wewole)

☐ Receiving agricultural payments / livestock sale proceeds

☐ Paying school fees

☐ Receiving a government payment / social transfer

☐ None of the above

C3. When you use mobile money, can you complete transactions on your own without help from anyone?

☐ Yes, always

☐ Most of the time

☐ Sometimes I need help occasionally

☐ Rarely; I almost always need help

☐ No, I always need someone to help me

C4. How far do you have to travel to reach the nearest mobile money agent?

☐ Less than 1 km

☐ 1–3 km

☐ 4–6 km

☐ 7–10 km

☐ More than 10 km

C5. In the past 30 days, how often did you find the mobile money agent had insufficient cash (was illiquid) when you needed to withdraw?

☐ Never

☐ Once

☐ 2–3 times

☐ More than 3 times

☐ I have never tried to withdraw

C6. In the past 30 days, how often did you experience network failure that prevented you from completing a mobile money transaction?

☐ Never

☐ Once

☐ 2–3 times

☐ More than 3 times

C7. Do you currently use mobile money to SAVE money?

☐ Yes, regularly

☐ Yes, occasionally

☐ I tried but stopped

☐ No, I have never saved via mobile money

C8 (If you do NOT save via mobile money): What is the main reason you do not save via mobile money? (Tick one.)

☐ I do not trust that my money is safe

☐ I do not know how to use the savings feature

☐ The interest rate is too low or there is no interest

☐ I prefer saving in my bulla savings group

☐ I prefer keeping cash at home

☐ I do not have enough money to save

☐ Network is unreliable

☐ Other (specify): _______________

C9. Have you ever received a mobile money loan (e.g., MoKash, Wewole)?

☐ Yes

☐ No; I did not know such loans exist

☐ No; I tried but did not qualify

☐ No; I do not trust mobile loans

C10. In your opinion, which mobile money services would be MOST useful for your household's economic needs? (Rank your TOP 3 by writing 1, 2, 3.)

Service	**Rank (1–3)**
Savings account linked to mobile money	
Access to small mobile loans for livestock inputs	
Livestock insurance / emergency payments	
School fees payment via mobile money	
Receiving livestock sale proceeds via mobile money	
Group savings (linking bulla group to mobile money)	
Government social transfers via mobile money	
Market price information services via mobile phone	

Section D: Barriers to Mobile Money Use (Objective 1 & 3)

Please indicate how much you agree or disagree with each statement. SD = Strongly Disagree | D = Disagree | N = Neutral | A = Agree | SA = Strongly Agree

Statement	**SD**	**D**	**N**	**A**	**SA**
The mobile network signal in my area is reliable enough to use mobile money.					
There are enough mobile money agents near my home.					
Mobile money agents in my area usually have enough cash when I need to withdraw.					
Mobile money transaction fees are affordable for me.					
I can read and follow the mobile money menu on my phone without help.					
I find it easy to enter my PIN and complete a transaction independently.					
I feel confident that the money I send via mobile money will arrive safely.					

Statement	SD	D	N	A	SA
I trust that money stored in my mobile wallet will not be lost.					
Mobile money is more convenient than travelling to a bank or SACCO.					
I have experienced a failed transaction where my money was deducted but not received.					
I am afraid of fraud or being cheated when using mobile money.					
The SIM card registration process was easy to complete.					

D2. What is the SINGLE BIGGEST barrier that stops you from using mobile money more often? (Tick one.)

☐ Poor network coverage

☐ Agent illiquidity (agent has no cash)

☐ High transaction fees

☐ Low digital literacy (difficulty using the phone / menus)

☐ Lack of trust in mobile money

☐ Lack of mobile money products suitable for my needs

☐ Distance to the nearest agent

☐ Lack of national identity card for SIM registration

☐ Other (specify): _______________

D3. What ONE change would most improve your ability to use mobile money for your household's financial needs?

____

Section E: Digital Literacy and Mobile Money Skills (Objective 3)

The enumerator should ask the respondent to demonstrate the following actions on their phone if available, or ask them to describe the steps verbally. Tick 'Yes' or 'No' accordingly.

Task	**Can Do (Yes)**	**Cannot Do (No)**
Dial the USSD code to open the mobile money menu (*165# or *185#)		
Select 'Send Money' from the menu		
Enter a recipient phone number correctly		
Enter the correct amount		
Enter PIN independently without showing it to anyone		
Check account balance independently		
Navigate to the 'Savings' option in the mobile money menu		
Describe how to withdraw cash from an agent		

E2. Have you ever attended any mobile money training or awareness session?

☐ Yes; organised by mobile money operator

☐ Yes; organised by an NGO / development partner

☐ Yes; organised by local government

☐ No, I have never attended any training

E3. Would you be willing to participate in a mobile money training if one were offered in your village?

☐ Yes, definitely

☐ Yes, probably

☐ Not sure

☐ Probably not

☐ Definitely not

Section F: Trust and Bulla Savings Groups (Objective 4)

F1. Are you currently a member of a traditional savings group (bulla) or any informal savings group?

☐ Yes

☐ No

F2. (If yes in F1) How long have you been a member of your bulla savings group?

☐ Less than 1 year

☐ 1–3 years

☐ 4–6 years

☐ More than 6 years

F3. Compared to mobile money savings, how much do you trust your bulla savings group?

☐ I trust bulla much more than mobile money

☐ I trust bulla slightly more than mobile money

☐ I trust them equally

☐ I trust mobile money slightly more than bulla

☐ I trust mobile money much more than bulla

☐ I have not used both, so I cannot compare

F4. Why do you trust your bulla savings group? (Tick all that apply.)

☐ I know the other members personally

☐ A respected elder or leader oversees the group

☐ Money is kept physically and I can see it

☐ Rules are clear and agreed by everyone

☐ I have been saving with the group for many years without problems

☐ Other (specify): _______________

F5. Would you be interested in a system that links your bulla savings group to mobile money so that group savings could be stored digitally?

☐ Yes, very interested

☐ Somewhat interested

☐ Not sure

☐ Not interested

☐ Strongly opposed I prefer bulla to remain separate from mobile money

F6. If such a system existed, what conditions would need to be in place for you to trust it?

Section G: Recommendations (Objective 5)

The following questions ask for your opinions and suggestions on how to improve mobile money services for pastoralists in your community.

G1. Which of the following improvements would make you use mobile money MORE often? (Tick your TOP 3.)

☐More mobile money agents in my village or nearby

☐Agents who always have cash available

☐ Better network signal in my area

☐ Simpler menus in Ngakarimojong

☐ Voice-guided transactions for people who cannot read

☐ Lower transaction fees

☐ Mobile loans for livestock inputs (seeds, veterinary services)

☐ Savings products that earn interest

☐ Insurance for livestock death or drought losses

☐ Linking bulla group accounts to mobile money

☐ More training on how to use mobile money

G2. In your own words, what is the most important thing mobile money companies (MTN, Airtel) should do to help pastoralists in Nadunget?

____

G3. What should the local government (sub-county or district) do to help pastoralists use mobile money more effectively?

____

G4. Is there anything else you would like to share about mobile money and its role in your household's economic life?

____

Enumerator certification: I confirm that this questionnaire was completed through a direct face-to-face interview with the respondent, that I read all questions aloud, and that I recorded responses accurately without suggesting answers.

Enumerator Name: ______________________ Code: ________ Date: ______________
Signature: ______________

APPENDIX II: KEY INFORMANT INTERVIEW GUIDE

Target respondents: Village elders, bulla savings group leaders, mobile money agents, sub-county officials, and community development officers (n = 15). Duration: 45–60 minutes per interview.

Instructions to interviewer: Introduce yourself and explain the purpose of the research. Obtain verbal or written consent before proceeding. Ask open-ended questions and use probes to encourage elaboration. Audio-record only where the respondent gives explicit permission. All responses are confidential. Use the respondent's preferred language (English or Ngakarimojong).

Part I: Introduction and Background

Respondent Code: ______________________________

Category of Informant: ______________________________

Date of Interview: ______________________________

Venue: ______________________________

Interviewer: ______________________________

Part II: Interview Questions

Theme 1: General Overview of Mobile Money in Nadunget (Objective 1)

1. In your view, how widely is mobile money used among pastoralists in Nadunget Sub-county? What types of transactions do you observe most frequently?

Probes: Which barrier is most severe? Has this changed in recent years? Are there differences between men and women, or between more mobile and settled households?

2. In your experience, what proportion of registered mobile money users are ACTIVE users that is, they use it regularly for more than just receiving money? What explains this gap?

Probes: Which barrier is most severe? Has this changed in recent years? Are there differences between men and women, or between more mobile and settled households?

3. What are the most significant barriers that prevent pastoralists here from using mobile money more actively? Please describe the most common problems you have observed or heard about.

Probes: Which barrier is most severe? Has this changed in recent years? Are there differences between men and women, or between more mobile and settled households?

Theme 2: Mobile Money Needs of Pastoralists (Objective 2)

4. Based on your experience with this community, what are the most pressing financial needs of pastoralist households that mobile money could potentially address safe savings, credit, secure transactions, or others?

Probes: Which financial need is most urgent? Are current mobile money products well matched to pastoralist cash-flow cycles? What products are completely absent?

5. Are there specific times of year such as during livestock markets, dry seasons, or school fee payment periods when the demand for mobile money services is particularly high? What challenges arise at those times?

Probes: Which financial need is most urgent? Are current mobile money products well matched to pastoralist cash-flow cycles? What products are completely absent?

Theme 3: Digital Literacy, Network Coverage, and Agent Reliability (Objective 3)

6. How would you describe the level of digital literacy among pastoralists in Nadunget? Are there particular groups such as older adults, women, or those with no formal education who face greater difficulties?

Probes: Have any digital literacy programmes been implemented? What do you know about MNO investment in network infrastructure here? What is the turnover rate of agents?

7. How reliable is the mobile network signal in Nadunget Sub-county? Are there specific villages or grazing areas where connectivity is consistently poor?

Probes: Have any digital literacy programmes been implemented? What do you know about MNO investment in network infrastructure here? What is the turnover rate of agents?

8. How many mobile money agents operate within Nadunget? Are they well-capitalised? How often do agents run out of cash, and what are the consequences for users?

Probes: Have any digital literacy programmes been implemented? What do you know about MNO investment in network infrastructure here? What is the turnover rate of agents?

Theme 4: Traditional Savings Groups and Mobile Money Integration (Objective 4)

9. How strong are traditional bulla savings groups in this community? How do community members view bulla compared to mobile money in terms of trust, reliability, and convenience?

Probes: Are there any existing examples of bulla groups using mobile money? What governance structures would communities require? Are women's groups especially relevant here?

10. In your view, is there potential to integrate mobile money with bulla savings groups for example, by allowing groups to store collective savings digitally? What would be the main benefits and risks of such integration?

Probes: Are there any existing examples of bulla groups using mobile money? What governance structures would communities require? Are women's groups especially relevant here?

11. What would the community need to see before trusting a mobile money–bulla integration? What role could community leaders, elders, or local government play in facilitating this trust?

Probes: Are there any existing examples of bulla groups using mobile money? What governance structures would communities require? Are women's groups especially relevant here?

Theme 5: Recommendations for Improving Mobile Money (Objective 5)

12. From your position, what specific actions should mobile money operators (MTN, Airtel) take to make their services more relevant and accessible for pastoralists in Nadunget?

Probes: What is most feasible? Who has the most leverage to create change? Are there any quick wins that could be implemented immediately?

13. What role should the sub-county or district local government play in promoting mobile money-based financial inclusion?

Probes: What is most feasible? Who has the most leverage to create change? Are there any quick wins that could be implemented immediately?

14. Are there any development organisations or NGO programmes currently operating in Nadunget that are working on financial inclusion or digital literacy? How effective are they? What gaps remain?

Probes: What is most feasible? Who has the most leverage to create change? Are there any quick wins that could be implemented immediately?

15. Is there any other information you would like to share about mobile money and economic inclusion in this community?

Probes: What is most feasible? Who has the most leverage to create change? Are there any quick wins that could be implemented immediately?

Interviewer note: Thank the respondent warmly. Remind them that their responses are confidential. If audio-recorded, confirm the recording is stopped before leaving. Complete field notes immediately after the interview while details are fresh.

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

Target respondents: Adult pastoralist men and women (separate groups) aged 18 and above. Each group: 6–10 participants. Total: 4 FGDs (2 male, 2 female) across 2 parishes. Duration: 60–90 minutes per FGD.

Instructions to facilitator: Welcome participants and introduce yourself and the note-taker. Explain the purpose of the discussion and that there are no right or wrong answers — you want everyone's honest opinion. Obtain verbal group consent. Conduct the session in Ngakarimojong. Encourage equal participation; ensure quieter members are invited to speak. Record on audio device where consent is given. Use the guide flexibly — follow interesting threads but ensure all themes are covered.

FGD Code: ______________________________

Parish / Village: ______________________________

Participant Category: ______________________________

Number of Participants: ______________________________

Date: ______________________________

Facilitator: ______________________________

Note-taker: ______________________________

Opening (10 minutes)

Warm-Up Question

W1. Let us begin with a simple question. How many of you own a mobile phone? (Show of hands.) And of those with a phone, how many have used mobile money at least once? Good. Can someone share what they used mobile money for most recently?

Purpose: Break the ice, establish baseline familiarity, and create a relaxed atmosphere. Do not probe deeply here.

Theme 1: Financial Practices and Mobile Money Use (Objectives 1 & 2)

Q1. Can you describe how your household manages money day to day? How do you save, borrow, or pay for things like food, school fees, and medicine?

Probes: Do you keep cash at home? Use a bulla group? Use mobile money? Visit a bank or SACCO? What is the most common way people here handle larger sums of money, such as after a livestock sale?

Q2. How do most people in this community use mobile money? What do they mainly use it for?

Probes: Is mobile money used only to receive transfers, or also to save and pay? Who uses it most men or women, older or younger people? Are there people who are registered but never use it?

Q3. Have any of you used mobile money to save money or receive a loan? What was that experience like?

Probes: Was the savings product useful? Was the interest rate fair? Was the loan affordable and easy to repay? Would you do it again?

Theme 2: Barriers to Mobile Money Use (Objective 1 & 3)

Q4. What stops people in this community from using mobile money more often? What are the most common problems you hear about or experience yourselves?

Probes: Is it the network signal, agents not having cash, cost of transactions, difficulty using the menus, or distrust? Which problem is the most frustrating? Has anyone stopped using mobile money because of these problems?

Q5. How easy or difficult is it for people here to use mobile money on their own? Do most people need help to send or receive money?

Probes: Do people share PINs with agents or family members? Is this seen as risky? Are women more likely to need help than men? What about older people?

Q6. How reliable is the mobile network in this area? Are there times of year or places where the signal is especially poor?

Probes: Does poor signal ever prevent you from completing an urgent transaction, such as sending money in an emergency? What do you do when the network fails?

Theme 3: Trust and Bulla Savings Groups (Objective 4)

Q7. Many people here are members of bulla savings groups. What do you value most about your bulla group? Why do you trust it?

Probes: Is it because you know the members? Because a respected elder oversees it? Because you can see the money? How long have most people been in their groups?

Q8. Compared to your bulla group, do you trust mobile money more or less? Why?

Probes: Has anyone lost money through mobile money fraud? Has anyone's bulla group had problems with misuse of funds? Which feels safer and why?

Q9. If your bulla savings group could be connected to mobile money so that the group's savings were stored digitally and members could contribute via their phones would you be interested? What concerns would you have?

Probes: Would you feel safe with money stored digitally rather than physically? Who would manage the account a group leader, an elder, or everyone together? What rules would the group need?

Theme 4: Recommendations (Objective 5)

Q10. If you could give one message to MTN or Airtel about how to improve mobile money for pastoralists in Nadunget, what would you say?

Probes: Should they bring more agents closer to the villages? Offer voice-guided menus in Ngakarimojong? Develop livestock-linked loans? Reduce fees? Train more community members?

Q11. What should the local government (sub-county or district) do to help people in this community benefit more from mobile money?

Probes: Should they support identity document registration? Run community training? Partner with NGOs? Provide mobile phones to the poorest households?

Closing

C1. Before we close, is there anything important about mobile money and your community's economic life that we have not discussed today? Please feel free to share.

C2. Thank you all very much for your time and your valuable contributions. Your responses will remain confidential and will be used only for this research. The findings will be shared with the sub-county and district authorities and will be used to make recommendations to improve mobile money services for communities like yours.

Facilitator note: Complete a brief written summary of key themes, dominant views, and notable disagreements immediately after the FGD. Note participant numbers, gender composition, and any disruptions or limitations observed. Attach this summary to the FGD recording or transcript.