Gordon Institute of Business Science
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Mobile money services and financial inclusion in rural communities within Western Uganda

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Abstract

Financial inclusion is essential for sustainable development particularly in rural communities underserved by conventional banking services. Mobile money services have emerged as a scalable yet feasible and convenient solution. Some rural communities within Western Uganda (like Rukungiri district) remain financially excluded despite the Country's high subscriber base.

This study explored how mobile money services influence financial inclusion in rural areas of Western Uganda and was framed by the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Threat Avoidance Theory (TTAT). It was centred around ascertaining a) the factors affecting access to mobile money, b) cultural influences affecting usage, c) financial and economic behaviour changes because of mobile money usage, and d) user perceptions around trust and security. Semi structured interviews were conducted with mobile money users, agents and community leaders within Rukungiri District and analysed thematically in alignment with Braun and Clarke (2006).

Whilst mobile money enhanced inclusion, structural considerations like network reliability, agent coverage, affordability and literacy were not the sole constraints of sustained adoption. Behavioural and cultural dynamics like user perceptions around trust, fraud and consumer protection also negatively influenced it thereby underscoring the need for context considerations when setting policy and business strategies.

Keywords

Mobile money, financial inclusion and rural Uganda.

Plagiarism Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Samuel Kikoni, 03rd November, 2025

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Chapter 1: Introduction to research problem

1.1 Introduction

Technology innovations such as mobile money operations that were launched over twenty years ago, have provided low-income populations with reasonable and affordable alternatives that enable them access and process financial transactions thereby reducing poverty (World Bank, 2022). Furthermore, this is more pronounced in some parts of Africa where the outreach of traditional banking services is limited (World Bank, 2022).

There is no requirement to access physical bank branches whilst using mobile money services given that they are designed to enable financial transactions through the user's mobile phone. This innovation has enabled a large portion of the population participate in the financial economy (Ahmad, Green, & Jiang, 2020).

Uganda is a good example of the transformation that mobile money services have had on financial inclusion with most of its population now subscribed to the services. Despite this, there is still a part of the population that remains excluded from the financial economy including some of the residents within Rukungiri district within Western Uganda. Deficiencies with infrastructure set up, affordability and literacy challenges, and limited confidence in the services are key factors that continue to inhibit participation (Hamdan, Lehmann-Uschner, & Menkhoff, 2022).

1.2 Problem statement

Despite Uganda being amongst the countries with the highest mobile money users globally, it retains a financial exclusion rate of 20% according to Financial Sector Deepening Uganda (2024). Furthermore, according to the same report, some rural areas in Western Uganda like Rukungiri district have exclusion rates that are much lower than the national average and north of 60%.

Whilst mobile money has improved payment and remittances, there are still concerns around user confidence in the platform, perceived benefit and whether its full potential is being realised. Prior studies have been mainly quantitative and have prioritised adoption statistics rather than user experiences and social influences from daily usage (Hamdan et al., 2022). In addition, barriers like unreliable network, insufficient float at agent outlets, high transaction costs that are passed to the customer, and fraud continue to affect system use.

Given the above, there is a need to better appreciate a) why exclusion remains high despite the presence of mobile money services, b) what social and cultural

factors influence usage of the services and c) how perceptions of risk and trust shape behaviour.

1.3 Rationale for the study

Mobile money represents one of the most promising solutions to addressing the financial inclusion challenge in rural communities. This is because of its ability to attract more users well beyond what traditional banking has achieve thus far (Bank of Uganda, 2023). However, this potential has not yet translated into full inclusion.

Ahmad et al. (2020) notes that consistent network uptime, sufficient agent coverage and addressing literacy and affordability challenges are key determinants of technology adoption particularly in in rural communities. These are best understood through qualitative analysis which is exploratory in nature.

This study therefore addresses this knowledge gap by determining how mobile money is used, perceived, and trusted within one rural Ugandan community. This will contribute to existing literature and knowledge and guides policy and business decisions that are aimed at reducing exclusion.

1.4 Relevance of the study

The study is consistent with Uganda's National Financial Inclusion Strategy (2023–2027), which posits financial inclusion as a key aspect of country's national development agenda. The findings will supplement the country's efforts to strengthen rural inclusion in line with Sustainable Development Goals one and eight.

From a business perspective, the study enables telecommunication companies and financial service providers better appreciate the behaviours and context of rural consumers in a bid to inform and influence their product designs and to also enhance service delivery. For policymakers and regulators, it provides information that is critical to policy making particularly in relation to consumer protection, agent regulation, and infrastructure sharing.

At the theoretical level, this research enriches the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Threat Avoidance Theory (TTAT) models in as far as understanding what drives adoption and avoidance behaviours in a rural African context.

1.5 Purpose of the study

The study seeks to obtain insights from residents of Rukungiri District that inform their usage of mobile money with an aim of appreciating the link between mobile money services and financial inclusion. The study will be based on answering four questions that are spelt out as part of the research objectives below and

analysed using UTAUT and TTAT models that provide a frame for interpreting adoption and risk-avoidance behaviours.

1.6 Research objectives

The research's main objective is to understand 'how mobile money services influence financial inclusion in rural communities within Western Uganda'.

Additionally, the research will assess the following

- What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?
- How does culture influence the use of mobile money in Western Uganda?
- How has mobile money impacted financial and economic behaviour of its users in Western Uganda
- What are the user perceptions around security, trustworthiness of mobile money services within Western Uganda?

1.7 Scope of the study

This research focuses on the live experiences of users within Rukungiri District in Western Uganda only. These will include active mobile money subscriber, agents, representatives of the telecommunication companies, and some community leaders. Rukungiri District is rural in nature, with a mobile money presence and with a high financial exclusion rate.

Conceptually, the study is restricted to the relationship between mobile money and financial inclusion and excludes other forms of digital finance such as internet or mobile banking. The study will attempt to obtain recent experiences (within the last five years) to ensure that they are relevant to the existing environment and contexts.

Figure 1.0

Map of Uganda highlighting Rukungiri District (in Red)

Note. Adapted from *"Rukungiri District in Uganda.svg"* by OpenStreetMap contributors, Jarry1250 & NordNordWest/Wikipedia, licensed under CC BY-SA 3.0. Retrieved from https://commons.wikimedia.org/wiki/File:Rukungiri_District_in_Uganda.svg

1.8 Business contribution

The study provides relevant information to businesses such as telecommunications companies based off the insights from the respondents. This covers economic, social aspects that are useful to improving their strategy and operations.

- The study provides the telecommunication companies and other financial service providers with a better understanding of the market particularly consumer behaviours, constraints and other unique attributes that they can incorporate into their product and solution development and pricing strategies. This will also ensure that the products offered remain relevant to the consumer thereby ensuring competitiveness of their offering.
- Additionally, the outcomes of the study will enable the telecommunication providers better appreciate consumer pain points like network unreliability, agent scarcity etc with a view of prioritising their resolution to make services better for the consumers and to increase adoption.
- Insights around fraud and trust will enable telecommunication companies develop relevant awareness programs and awareness toolkits to strengthen consumer protection.
- Telecommunication companies can utilise the outcomes of the study to strengthen their plans for new markets and environments to increase their business performance and for shared benefit with the communities

Policy makers can also use the findings of the research to strengthen existing regulation around say pricing, transparency and conduct (both agent and telecommunications providers). This will further improve consumer confidence in mobile money services and thereby increasing accessibility, adoption and subsequently financial inclusion.

1.9 Theoretical contribution

The study extends existing literature in this field by combining the application of UTAUT and TTAT models in Western Uganda to better understand avoidance and adoption behaviours in rural areas. It also provides new insights and realistic perspectives on aspects like user confidence, security etc that have not been extensively researched previously.

Chapter 2: Literature review

2.1 Introduction

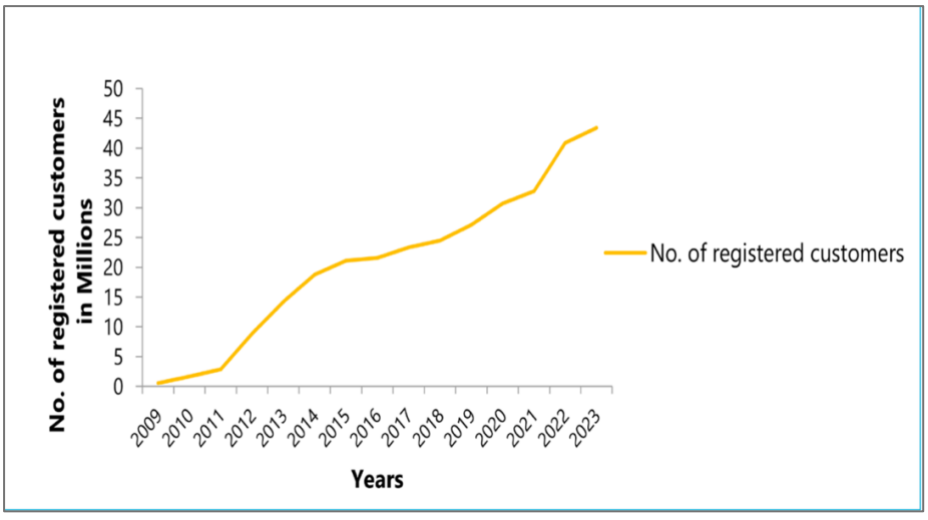
Financial inclusion refers to sustainable provision of useful and affordable financial services to populations in underserved communities that are characterised by low incomes and financial infrastructure that is non-existent or isn't fully developed (World Bank, 2022). Over the years, mobile money services have been viewed as a solution to addressing financial inclusion given their practical, scalable, convenient and affordable operation enabled through the mobile phone (GSMA, 2023)

Similar sentiments are held in Uganda and evidenced through its high adoption rates since it was first launched in the country in 2009. The mobile money active subscriber base continues to grow and currently exceeds the overall number of traditional bank accounts in the country by more than 20 million as per Bank of Uganda, (2023).

Figures 2.0 and 2.1 below reflect the rapid growth of mobile money subscribers and transaction volumes in Uganda over the last 15 years.

Figure 2.0

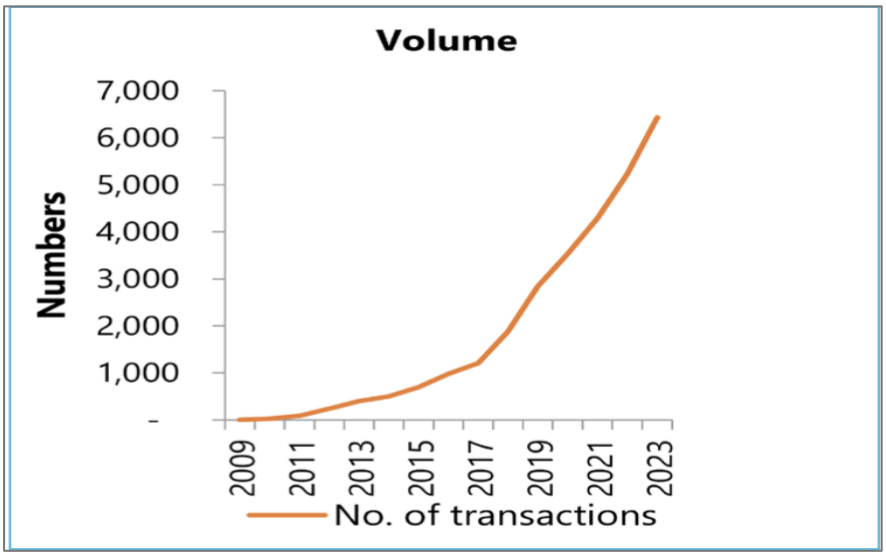
Number of mobile money subscribers in Uganda since 2009



Note. *Adapted from Uganda's Banking Sector Report for the Year 2023 and June 2024*, by the Uganda Bankers Association (2024). Available at https://ugandabankers.org/Uganda's%20Banking%20Sector%20Report%20for%20the%20year%202023%20and%20June%202024%20.pdf

Figure 2.1

Mobile money transaction volumes in Uganda (in millions)



Note. *Adapted from Uganda's Banking Sector Report for the Year 2023 and June 2024*, by the Uganda Bankers Association (2024). Available at https://ugandabankers.org/Uganda's%20Banking%20Sector%20Report%20for%20the%20year%202023%20and%20June%202024%20.pdf

The above notwithstanding, as per FSDU (2024), a large portion of Uganda's population (22%) remained without access to financial services. Hamdan et al. (2022) attributes this to inadequate infrastructure, low levels of education, affordability concerns and limited confidence in digital systems.

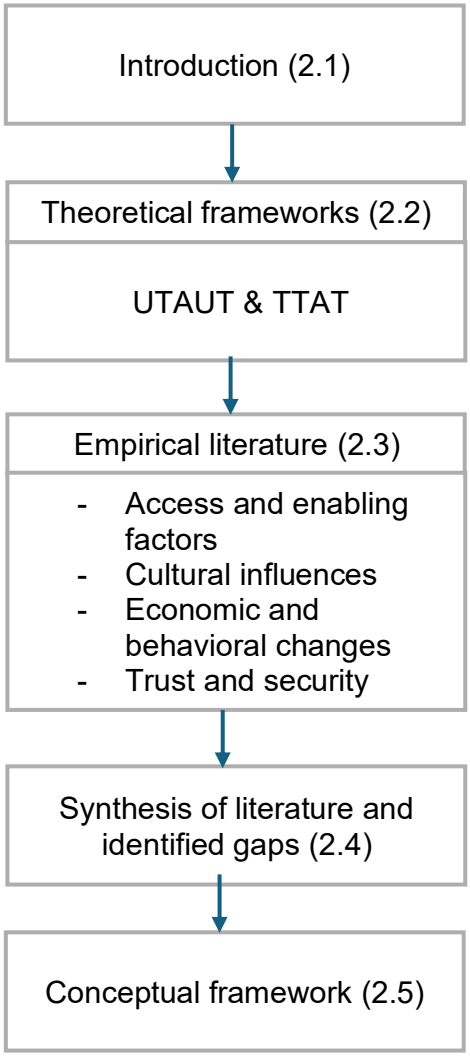
The study therefore looks to understand the factors that are preventing the country from achieving higher financial inclusion rates despite the high mobile money adoption rates. This will be achieved by interacting with some residents of Rukungiri District within Western Uganda to obtain their daily experiences with respect to usage of mobile money services. Given this, the purpose of the literature review is to explore what is known and unknown about mobile money services and its influence on financial inclusion. In addition, the theoretical and conceptual basis for the study will be extended using the Unified theory of acceptance and use of technology (UTAUT) and Technology threat avoidance theory (TTAT) models. These will expound knowledge around adoption and perceptions relating to the use of technology.

The literature review will commence with theoretical foundations, followed by an analysis and comparison of existing literature in relation to the research questions that cover mobile money accessibility, cultural influences, impact on economic and financial behaviour and lastly, perceptions around trust and security. The review will also detail any gaps in existing literature. Of note however is that existing literature on mobile money is limited given that it is a recent technological innovation.

The structure of the literature review is further summarised in *Figure 2.3 below and highlights* the logical flow from theoretical to conceptual frameworks.

Figure 2.3

Literature review road map



Note: The diagram above reflects the logical flow of the literature review, showing how theoretical, empirical, and conceptual sections collectively inform the research problem and questions.

2.2 Theoretical frameworks

This study is based on two frameworks that are complementary when explaining use of technology and financial inclusion and these are detailed below.

2.2.1 Unified theory of acceptance and use of technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) model was developed by Venkatesh, Thong, and Xu (2019) and covers the following concepts in relation to technology adoption

- Performance expectancy, which reflects the extent to which prospective users have confidence that a system will enable them to achieve their desired outcomes. In the context of mobile money, this includes convenience, speed, and reliability (Amoah, Korle, & Asiama, 2020).
- Effort expectancy, which relates to the convenience when using the system. User friendly interfaces like Unstructured Supplementary Service Data (USSD) on which mobile money is built, make adoption more likely in rural areas where literacy levels may be low (GSMA, 2022).
- Social influence reflects how social networks like family, friends, and community influence adoption of new technologies. In rural Uganda, such influence is pivotal in normalising mobile money use (Amoah et al., 2020).
- Facilitating conditions that affect adoption like agent distribution and availability and network stability (Bank of Uganda, 2023; Johnen, Parlasca, & Mußhoff, 2023).

Batista and Vicente (2023) highlighted affordability as one of determinants of adoption in their study in Mozambique. Similarly, Amoah et al. (2020) attributed adoption amongst rural communities in Africa to affordability and access. Both these are consistent with the UTAUT model above and align with Uganda's context, where mobile money's success depends on both infrastructure and local social networks (FSDU, 2024).

UTAUT however focuses primarily on rational adoption drivers overlooks some contextual aspects like fear, fraud, or social mistrust that are relevant in rural and low literacy settings (Osabutey & Jackson, 2024). This therefore underscores the need to complement UTAUT with another theory to address such aspects like TTAT that is detailed below.

2.2.2 Technology threat avoidance theory (TTAT)

Technology Threat Avoidance Theory (TTAT) on the other hand was developed by Liang and Xue (2010) and positions that users deploy two mechanisms to deal

with security-related behaviours i.e. their ability to assess the risk and their ability to cope which are detailed below.

- Threat appraisal where the potential risks like fraud and theft are assessed against the severity of impact and likelihood of occurrence.
- Coping appraisal which relates to mechanisms users' put in place to prevent and protect themselves from such risks.

TTAT is therefore important when trying to understand why users of mobile money as an example, still have reservations about using the system despite the convenience it provides. Ahmed and Cowan (2021) noted that system reliability and user concerns around data privacy affected sustainability of digital platforms. Whilst Shaikh, Glavee-Geo, Karjaluoto, and Hinson (2023) also highlighted that user confidence and their appreciation of risks directly affected the sustainability of mobile money adoption in developing countries.

In Uganda, Hamdan et al. (2022) noted that user concerns around fraud, agent misconduct, and network intermittence influenced adoption especially in rural communities. This is consistent with TTAT model which argues that users will avoid technology when they anticipate high risk levels together with limited control over mitigation. On the flip side, when users have a better appreciation of technology and feel protected, they are more confident leading to adoption.

2.3 Existing literature

This section reviews existing literature relating to mobile money and financial inclusion against the following four areas that are aligned with the research questions. These themes reflect the experiences of mobile money users in rural settings like Rukungiri District.

1. Factors facilitating or inhibiting access to mobile money
2. Cultural influences on usage
3. Financial and economic behavioural changes
4. Perceptions of security and trustworthiness

2.3.1 Factors facilitating or inhibiting access

Infrastructural, economic and social-cultural factors are instrumental in shaping the usage and adoption of mobile money services within sub-Saharan Africa. Existing literature highlights agent distribution, network coverage, stability and affordability of the service as key determinants (Johnen et al., 2023; Amoah et al., 2020). Agent outlets in Uganda have grown significantly and currently exceed traditional bank footprint (Uganda Communications Commission, 2024). Users

perform cash in and out services at agent outlets distributed across the country. Insufficient float management and unreliable service negatively affect adoption (Bongomin et al., 2018).

Mothobi and Grzybowski (2017) noted that weak infrastructure such as intermittent network availability limits usage and adoption of mobile money services. GSMA (2022) also notes that rural users occasionally experience network outages, which affect user confidence and adoption. Additionally, low digital literacy levels make challenging to navigate user interfaces or to address errors and is more pronounced with older generations (Ozili, 2021).

Affordability is another important factor. Ahmad et al. (2020) highlighted that despite being cheaper than traditional banking services, users that have low incomes could still find the costs quite prohibitive. Tiered cost structures have been proposed by some studies in a bid to resolve for this (Hamdan et al., 2022). Shared infrastructure and network interoperability have also been proposed in a bid to lower operational costs incurred by the telecommunication providers thereby making services affordable and subsequently improving

Social factors such as awareness and trust also determine adoption. Amoah et al. (2020) noted that in rural communities, peer influence, acknowledgement from community members also drove participation. Lashitew et al. (2019) underscored the importance of social trust and community acknowledgement when embedding such digital solutions.

2.3.2 Cultural influences on mobile money usage

Technology usage and adoption is significantly influenced by culture within rural settings. Strong cultural and social cohesion are synonymous with rural communities in Uganda. Additionally, rural communities are also characterised by informal financial structures such as Savings and Credit Cooperative Organisation (SACCO)s. These structures complement formal structures like mobile money yet also in direct competition with them (Batista & Vicente, 2020; Ahmad et al., 2020). Culture shapes user perceptions around technology, trust and related threats.

Asongu and Le Roux (2023) emphasised that mobile money services promoted entrepreneurship and financial independence in women. Despite this, gender barriers like household power dynamics, and social norms continue to prevent women from exhausting all benefits from mobile money services. Riley (2018) further showed that mobile money enabled women manage savings privately thereby protecting them from cultural pressures around management of finances.

Cultural resistance can also hinder adoption. Ahmad et al. (2020) together with Osabutey and Jackson (2024) pointed out that there was still a preference for physical cash in some communities which is viewed as a safer option to digital finance. Language barriers and knowledge gaps about mobile money like unwarranted fears of losing money to a digital platform persist in some rural settings (Demirgüç-Kunt et al., 2020).

These findings note that service providers of mobile money services should focus on building user confidence and ensuring that systems are designed to respect local customers and languages. Embedment of technology innovations is a gradual process, and success is ensured when there is alignment and consideration of existing cultural and social norms within product designs (Lashitew et al., 2019).

2.3.3 Financial and economic behavioural changes

Mobile money has disrupted financial and economic behaviour within rural settings. It has enhanced financial control by providing users with convenient ways to make financial transactions such as savings, remittances. Evidence based research in Africa confirms that household welfare, business operations and savings are all enhanced by mobile money (Batista & Vicente, 2023; Ahmed & Cowan, 2021).

In Uganda, Munyegera and Matsumoto (2016) observed that mobile money increased remittances between rural and urban households thereby supporting economic activity within the area. Hamdan et al. (2022) also highlighted that users of mobile money were more likely to engage in entrepreneur activities. Batista and Vicente (2020) similarly observed that smallholder farmers who used mobile money for savings and purchase of inputs improved their productivity and reduced vulnerability to economic shocks.

Mobile money enables rural households deal with economic shocks by providing quick access to remittances when they happen (Riley, 2018). These financial behaviours reflect increased economic participation and thereby inclusion. Ahmad et al. (2020) however noted that mobile money services are mainly used for basic transactions which highlights a gap between access and meaningful usage.

2.3.4 User perceptions of security and trust

Trust and perceived security influence mobile money usage and adoption. According to TTAT, perceptions around severity of the risk and coping ability shapes behaviour (Liang & Xue, 2010).

Shaikh et al. (2023) found that trust in mobile money services was enhanced transparency, reliability, and presence of formal support structures. Confidence in

mobile money service reduces whenever there is network intermittence or whenever there are instances of fraud. This subsequently minimises adoption and usage. Mogaji and Nguyen (2022) referred to this as the dark side of mobile money, where fraud, agent misconduct, and network intermittence negatively affect user confidence in the system.

Accountability that is enforced through strong regulatory supervision is therefore essential to ensuring sustained user confidence in the services. Whilst Bank of Uganda (2023) highlighted changes to regulation that resulted in improvements to system security and dispute resolution, some users remained sceptical of the services, and particularly those that have previously lost some money either through fraud or errors (UCC, 2024). The Financial Sector Deepening Uganda (2024) confirms that trust remains a barrier for many rural users, especially the elderly and less literate, who often rely on others like family to process transactions.

User awareness initiatives also influence trust. Users with higher awareness of security protocols like PIN protection, name and number verification prior during transaction processing are more confident in using mobile money (Ahmed & Cowan, 2021). TTAT suggests that avoidance behaviours reduce when perceived coping ability increases. This leads to stronger engagement and inclusion. Therefore, individual knowledge and system reliability are important to sustain confidence in the system and improve financial inclusion.

2.4 Synthesis of literature and identified gaps

The review of existing theories and literature illustrate the immense contribution that mobile money has played in enhancing financial inclusion in sub-Saharan Africa. This is also echoed by the World Bank (2022). The extent of financial inclusion, however, differs based on geography, culture, and infrastructural circumstances. In rural areas such as Rukungiri District, financial inclusion is determined not only be access to technology but by user perceptions around the system, their confidence levels with it and how they have embedded it into their day to day lives. Four interrelated insights emerge.

- Adoption and accessibility are not the only determinants of financial inclusion. Whilst penetration rates in Uganda are some of the highest globally, usage is not consistent (FSDU, 2024). The literature has revealed that network stability, insufficient liquidity at agent points and affordability are other considerations that influence inclusion beyond access. Such issues affect consistent usage of the services or the take up of the more advanced features

like savings and credit facilities (Hamdan et al., 2022). Ahmad et al. (2020) noted that achieving full inclusion required resolution of affordability and infrastructural issues.

- Studies by Asongu and Le Roux (2023) and Riley (2018) posited that despite increased women empowerment from the use of mobile money services, patriarchal norms and social expectations limited their independence. Similarly, societal views around the conduct of agents and service providers can hinder or spur adoption rates. This therefore acknowledged that user confidence can be influenced by cultural and societal nuances.
- Studies within Uganda and Africa reveal that user experiences relating to fraud or transaction errors limit usage of mobile money services (Hamdan et al., 2022; Shaikh et al., 2023). Mogaji and Nguyen (2022) also highlighted instances of negative agent behaviour and poor customer service that had minimised trust among rural users. These findings highlight that psychological factors can also reverse previously registered gains in financial inclusion.
- Existing studies ignored lived experiences and contextual nuances. Majority of the previous studies have been quantitative and based on national survey or financial usage data (Batista & Vicente, 2023; Hamdan et al., 2022). Such studies are useful identifying trends but short on capturing realities on the ground with respect to day-to-day mobile money operations. This study therefore sought to address this gap through insights shared by users in Rukungiri district in Western Uganda.

In summary, existing literature posits that mobile money enhances financial inclusion, but it doesn't fully explain why financial inclusion remains low within some communities and rural settings. In addition, despite extensive research that has been carried out thus far, the majority have taken a quantitative approach thereby offering limited insights into psychological and cultural aspects that shape trust and sustained usage. Little is also known about how users navigate risks and embed mobile money into daily lives. This qualitative study therefore sought to understand these gaps and their influence on financial inclusion through the experiences of rural users in Rukungiri within Western Uganda.

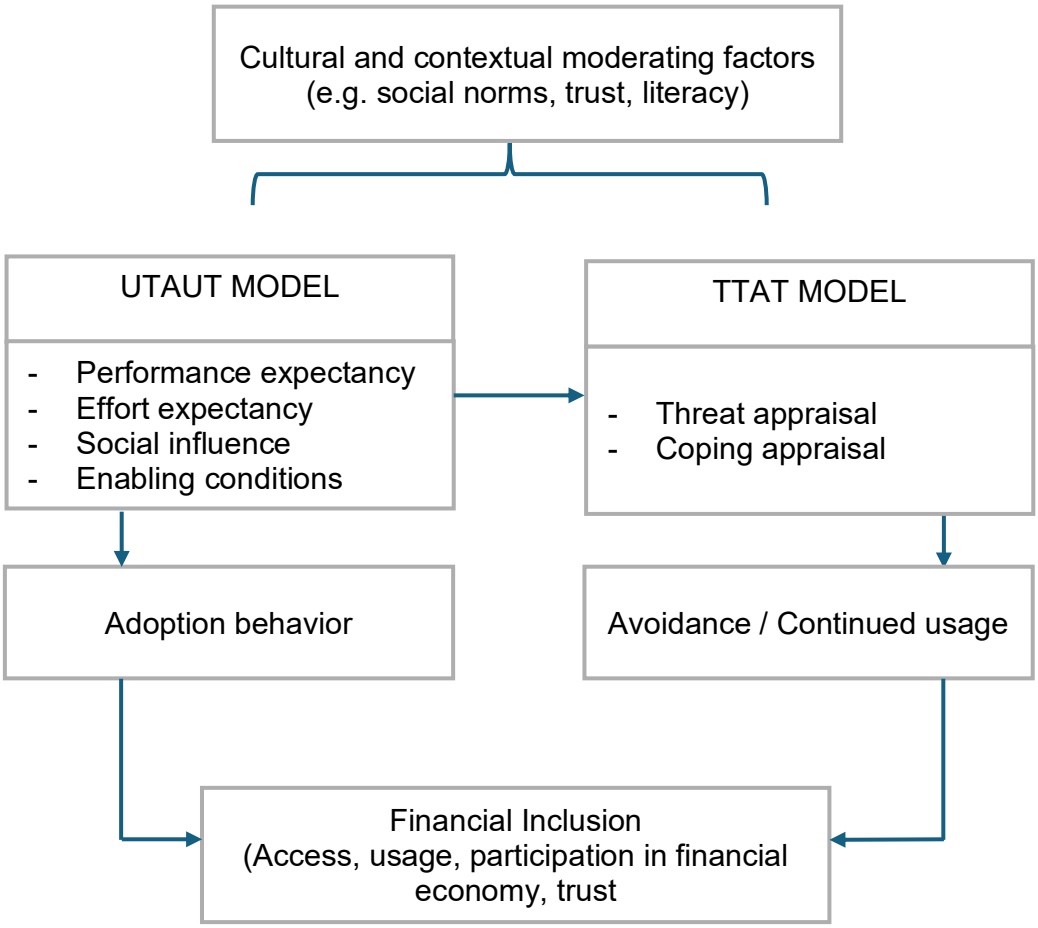
2.5 Conceptual framework

UTAUT and TTAT theoretical models were combined to derive the conceptual framework of this study in a bid to understand adoption and avoidance behaviours

among mobile money users in rural Uganda. Users could have experienced the services as convenient or as risky and unreliable.

Figure 2.4

Conceptual framework that combining UTAUT and TTAT to address research question.



Note. The framework illustrates how UTAUT and TTAT interact to influence users' adoption or avoidance of mobile money services.

2.5.1 Integration of UTAUT and TTAT

In the context of mobile money services, the four UTAUT constructs represent its simplicity and convenience, social encouragement and available infrastructure (Amoah et al., 2020). They capture what motivates users to start using mobile money services. TTAT on the other hand focuses on how users assess and respond to potential technological threats, such as fraud or data insecurity. It captures

the reasons why users might mistrust, limit or stop using mobile money (Hamdan et al., 2022; Shaikh et al., 2023).

A combination of these 2 models suggests that technology adoption is a fluid concept hinged on a trade-off between perceived benefits (UTAUT) and perceived risks (TTAT). This is particularly relevant for rural Uganda, where technological enthusiasm exists together with fears around fraud and network reliability as an example.

2.5.2 Application to the research questions

The conceptual framework directly aligns with the study's research questions:

Research question	Theoretical link	Indicators
What factors facilitate or inhibit access to mobile money services?	UTAUT	Performance expectancy, facilitating conditions, affordability, agent availability
How does culture influence the use of mobile money	UTAUT + contextual considerations	Social influence and trust, cultural nuances and gender roles
How has mobile money impacted users' financial and economic behaviour	UTAUT	Performance expectancy, perceived value, convenience
What are users' perceptions of security and trustworthiness	TTAT	Threat appraisal (fraud, network risk), coping appraisal (awareness, trust)

The framework captures both the structural and psychological determinants of financial inclusion.

2.5.3 Conceptual flow

The model views financial inclusion as the outcome of three concepts below a) Adoption of mobile money services is initially driven by structural factors like ease of use, perceived benefits from usage and encouragement from communal and social networks b) Subsequently, users continuously assess the risks of using mobile money services and will continue usage if coping responses are positive however, to the contrary, users will discontinue usage if negative c) Both the above, are

influenced by existing cultural and social nuances. As an example, trust in agents might be impacted by gender roles.

Financial inclusion is enhanced when there are strong enabling conditions and perceived risks are managed effectively (Concepts a and b above interact positively). However, when risks are more than the perceived benefits, confidence in the system is minimised and users distance themselves from the services.

Chapter 3: Research questions

3.1 Introduction

This chapter highlights the research questions of the study that are drawn from gaps identified from the existing literature underpinned by UTAUT and TTAT theories that define factors that encourage and deter mobile money usage and its contribution to financial inclusion.

3.2 Research questions

The primary objective of this study is to determine how mobile money services influence financial inclusion in rural communities within Western Uganda. To achieve this, the study addresses the following research questions:

1. What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?
2. How does culture influence the use of mobile money in Western Uganda?
3. How has mobile money impacted the financial and economic behaviour of its users in Western Uganda?
4. What are the user perceptions around the security and trustworthiness of mobile money services within Western Uganda?

These questions are exploratory in nature and intended to capture user perceptions, experiences and behaviour aligned to their contextual circumstances that haven't been adequately addressed by previous and existing quantitative studies.

Chapter 4: Research methodology

4.1 Introduction

This chapter highlights the framework and concepts used in the study, approach and techniques followed to collect and analyse data. In addition, it demonstrates how quality control and ethics were managed within the study and their limitations.

An interpretivist philosophy was followed for this study and aimed at better appreciating how rural users in Western Uganda engage and experience mobile money services as a platform for financial inclusion. The study was qualitative in nature given the need to capture deep insights from the respondents' everyday lives to answer our research question.

4.2 Research design

4.2.1 Research design

The study was guided by phenomenological research design which Creswell (2013) defines as one aimed at understanding the daily experiences of respondents when trying to appreciate the linkage between mobile money and financial inclusion within Western Uganda. The design required that respondents of the study have experience using mobile money services and this formed a critical part of the sample criteria of the research as detailed further below. These experiences are what the research design sought to obtain, analyse and interpret to address the research question.

4.2.2 Research philosophy

An interpretivist philosophy was adopted for the study in line with Creswell (2013) who suggest that reality is developed when deeper insights of individual and collective experiences of users within a society are obtained. From an ontological perspective, reality was created from the experiences and perspectives of the different individuals within Rukungiri district that were shaped by economic, cultural and social behaviours. From an epistemic perspective, the researcher and respondent engaged through semi structured interviews to obtain these insights, which were then later analysed and interpreted to answer the research question. From the above, the study is qualitative in nature and as noted by Creswell (2013), aims at interpreting meaning rather than quantifying behaviour.

The research followed an inductive analysis approach wherein data was obtained from respondents within Western Uganda, on their daily experiences which lead to the formulation of themes and subsequently the conclusions of the report. In other words, theory was derived from the data.

4.2.3 Research strategy

As highlighted above, the study was phenomenological in nature and Rukungiri District in Western Uganda selected given its rural nature, growing mobile connectivity and its current level of financial inclusion which FSD Uganda (2024) highlight as being one of the lowest within Uganda. This design therefore enabled the researcher to appreciate how infrastructure, social, cultural, and behavioural aspects connect to shape financial inclusion outcomes in such environments.

4.2.4 Time horizon

The study used a cross-sectional time horizon and data collection, which happened between August and early October 2025 allowing the research to obtain a snapshot of current experiences, perceptions, and behaviours. This was appropriate given the time and resource constraints with respect to MBA thesis submission timelines.

4.3 Research methodology

4.3.1 Population

The population for this study consisted of mainly mobile money users that reside in rural communities within Rukungiri District. A few agents, community leaders and telecommunication providers were included as well given the importance of their insights in the study. All respondents were above the ages of 18 years and had experience of at least 2 years using mobile money platform in one way or the other.

4.3.2 Unit of analysis

The unit of analysis were the accounts of the perceptions individual respondents within Rukungiri that included existing users, agents and community leaders as highlighted above.

4.3.3 Sampling method and size

A purposive sampling technique was employed. Unlike with probability sampling, the researcher identified respondents that were most likely to provide deep and applicable insights for the study (Creswell, 2013). The following met the selection criteria.

- Had experience using mobile money services of at least 2 years
- The respondents needed to have attained the age of at least 18 years and not exceeding 70 years.
- The respondents needed to be residents of Rukungiri District within Western Uganda.

The study was applicable to both males and females as the researcher looked to obtain any gendered insights aligned to the research objectives. In addition, Agents,

Community Leaders and Service providers were also included as part of the respondents to ensure the insights collected from the study gave a more balanced and accurate picture.

A final sample comprised twelve respondents that mainly included subscribers with some agents and community leaders. The subscribes cut across different ages, occupations, and education demonstrating diversity across gender, age, and education, thereby enhancing the representativeness of insights gathered (See table 4.1 Respondent details and characteristics).

Table 4.1

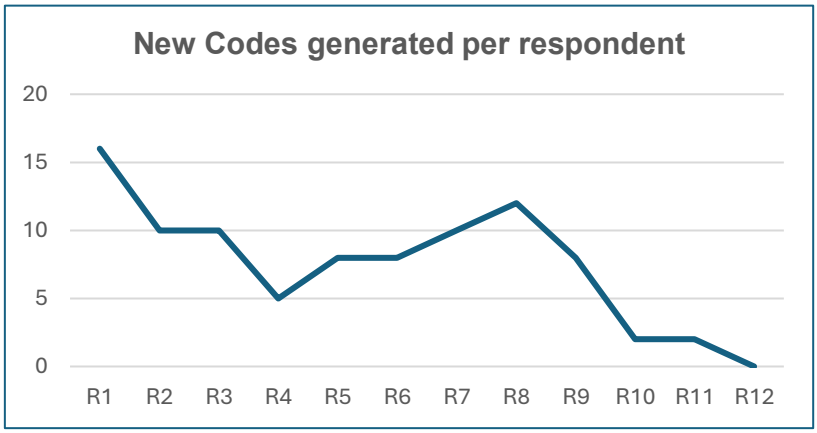
Respondent details and characteristics

ID	Gender	Age	Occupation	Usage	Location	Role
R1	Male	55	Farmer	10 years	Kebisoni	User
R2	Female	60	Farmer	15 years	Buyanja	User
R3	Female	35	Self employed	2 years	Kebisoni	Agent
R4	Female	44	Domestic worker	6 years	Buyanja	User
R5	Male	30	Procurement officer	5 years	Kebisoni	User
R6	Female	42	Community Leader	10 years	Kebisoni	Community leader
R7	Male	44	Community Leader	10 years	Kebisoni	Community leader
R8	Male	41	Service provider	14 years	Rukungiri	Service provider
R9	Female	32	Self employed	5 years	Ndama	Agent
R10	Female	40	Farmer	5 years	Ndama	User
R11	Female	38	Farmer	3 years	Kebisoni	User
R12	Female	42	Farmer	8 years	Kebisoni	User

The sample size of twelve was determined by data saturation, given that there were no new themes generated by additional interviews as shown by figure 4.2 below (Guest, Bunce, and Johnson, 2006).

Figure 4.2

New codes generated per respondent



The spikes noted in new codes generated like at R3, R5, R8, R9 were mainly because of the insights obtained from Agents (R3 and R9), Community leaders (R5) and Service providers (R8). Otherwise, new insights from plain users of the mobile money services kept reducing and had materially dropped by the twelfth respondent.

4.3.4 Measurement Instrument

Data was collected using a semi-structured interview guide shown in the appendix, that was designed with open-ended questions to draw more insights from the respondents. The questions were aligned to the four research questions to ensure that they are relevant to the study. The interviews were not of similar length but on average lasted about 30 minutes. Engagements between research and respondents were largely in English and where some sentences were spoken in Runyankole (local language), the research interpreted and repeated these in English. Recordings were made for all the interviews held. The respondents' consent was obtained prior.

4.3.5 Data Gathering Process

Fieldwork took place across three sub-counties i.e. Kebisoni, Ndama, and Buyanja within Rukungiri district. Given the intentional method of sampling that was used, the researcher visited community groups like markets and churches within the community to access respondents that meet the criteria for inclusion for the research. This was done repetitively until data collection was concluded.

Interviews were conducted in closed doors at trading centres or within church and community premises. Respondents were assigned a unique identity, and the researcher gained their consent prior to each interview. They were also advised (as part of their consent) that their participation was voluntary and that confidentiality

would be observed. Data collected was securely stored through file password protection. In addition, a voice recording of each interview was made and transcribed to ensure that the views of the respondent can be replayed to ensure accuracy. The recordings were stored in the cloud and a copy also provided to the GIBs research team for their custody.

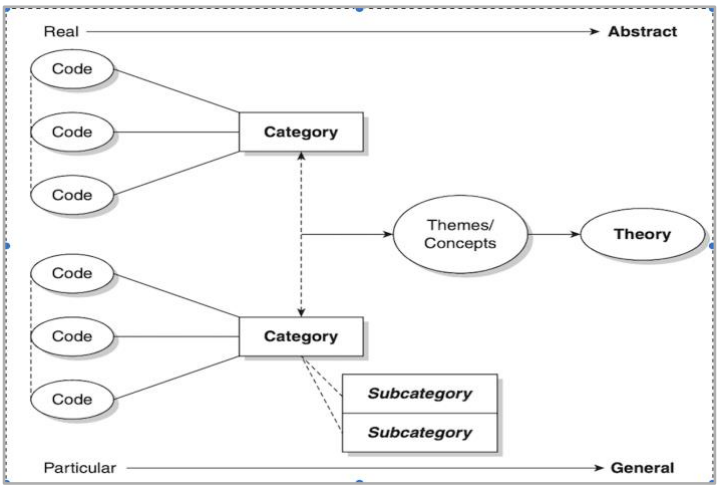
4.3.6 Data analysis approach

Data was analysed in alignment with the steps below by Braun and Clarke (2006) and consistent with the code to theory model highlighted in the figure below by Saldaña (2013)

1- Transcripts from the interviews were reviewed numerously by the researcher to better understand each insight that had been shared by the respondents.
2- Post this, codes were generated from the transcribed text through qualitative data application Atlas.ti. These were aligned to the different research questions and resulted in a total of 107 unique codes as listed in the appendix.
3- Subsequently, codes were grouped into categories from which the following themes were derived as per the table below.
4- After the themes were refined, the researcher commenced to document findings of the study that were linked back to respondents' feedback. This created transparency and ensured that the findings were aligned to the respondents' experiences.

Figure 4.3

Saldaña codes-to-theory model for qualitative inquiry



Note. Adapted from *The Coding Manual for Qualitative Researchers* (2nd ed., p. 13), by J. Saldaña, 2013, Sage Publications. Copyright 2013 by Sage Publications.

Table 4.4

Themes generated from the coding exercise

Research Questions	Themes from the respondent feedback
What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?	• Structural and infrastructural enablers of access • Affordability and service constraints • Awareness and socio-cultural considerations • Perceived value and trust in mobile money services
How does culture influence the use of mobile money in Western Uganda?	• Social and cultural integration of mobile money • Social Networks and gendered influences on adoption • Trust and cultural preference for cash
How has mobile money impacted the financial and economic behaviour of its users in Western Uganda?	• Business growth and transaction efficiency • Convenience and financial management practices • Financial and consumption behaviour • Risk reduction and security handling
What are the user perceptions around security and trustworthiness of mobile money services within Western Uganda?	• Evolving trust and vigilant use • Fraud and security risks • Institutional and systemic safeguards • Awareness and public education • Privacy and data concerns
Recommendations	• Strengthening infrastructure and access • Enhancing regulatory oversight and fraud prevention • Promoting financial literacy and inclusion • Incentives and service improvements

4.4 Quality controls

In alignment with Golafshani (2003), the following quality controls were applied during the study to ensure credibility of the outcome, transferability, dependability and confirmability. Respondents of the study included Users, Agents, Community Leaders and service providers. This broadened the insights of the study which were obtained from key players within the ecosystem. This improved overall credibility of the report given the contribution from all parties

In addition, a record was maintained for all key activities of the study from data collection through analysis to conclusions. This ensured that the process followed by the researcher can be audited hence confirming dependability of the process. In addition, the approach to the study was documented and presented prior to the GIBS research committee who approved the methodology and design of the process.

To ensure that the study outcomes can be transferred to other areas, the researcher spent adequate time with the respondents during the interviews to ensure that insights were accurately captured and that the respondent characteristics were also obtained. The researcher also sought and obtained a deep understanding of Rukungiri District and in particular the 3 sub counties that contributed to the study. These have been detailed in the study.

A research supervisor was on hand and was continuously engaged to also ensure that there was minimal bias and that the researcher always based the findings on respondents' data and not own biases.

4.5 Research ethics

A research proposal was submitted to the GIBS research committee in June 2025, and ethical clearance was obtained on the 7th of August 2025 to proceed with the research. The researcher ensured that all respondents of the study were advised of its purpose and optional nature. In addition, prior to commencement of the interviews, consent was requested and obtained from the respondents and their details anonymised through IDs and codes. Interview recordings have been securely stored and a copy submitted to the GIBs research team.

4.6 Methodological limitations

The study was limited to the views of respondents within 3 sub counties in Rukungiri District. Whilst this provided rich perspectives, there could be other specific nuances in other rural locations outside of Rukungiri and thereby limiting the ability to generalise to other areas. In addition, data obtained from the respondents might have only captured most recent events and thereby leaving out significant information that could be key to the study.

Chapter 5: Findings / Results

5.1 Introduction

The qualitative findings from 12 participants from Rukungiri District are disclosed and analysed in this chapter. The study assesses how mobile money services shape financial inclusion in rural Uganda and focuses on accessibility, social and cultural interactions, economic mannerisms and views around security and trust. The analysis is premised on understanding the lived experiences of the participants with respect to mobile money usage and the meaning they attach to it. The findings are grouped by the 4 research questions listed below.

- What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?
- How does culture influence the use of mobile money in Western Uganda?
- How has mobile money impacted the financial and economic behaviour of its users in Western Uganda?
- What are the user perceptions around security and trustworthiness of mobile money services within Western Uganda?

Under each research question are themes gathered from the participants feedback and evidence in the form of quotations extracted directly from the structured interviews in support. Each theme is clearly defined and linkages to research question are also adequately explained.

5.1.1 Reflection and analytical approach

As highlighted in Chapter 4, the research follows an interpretive approach that seeks to understand mobile money as social service that is integrated in the daily lives, relationships and traditions. A step-by-step thematic process was used for the analysis using Atlas.ti and involved identifying 107 unique codes of significant information obtained from the structured interviews and listed in the appendix (e.g. agent proximity, network instability, insufficient liquidity / float, digital literacy, gender, trust). Similar codes of information were grouped together into themes, refined and reported as findings of the study (Braun & Clarke, 2006).

5.1.2 Respondent characteristics

Respondents were between the age of 30 to 60 years and majority in farming given the area of the study. Respondents included users, agents, community leaders and telecommunication representatives thereby providing sufficient depth to credibly address the research questions. Majority of the respondents had used mobile money services for more than 5 years and were evenly distributed between early and late adopters.

5.2 Factors facilitating or inhibiting access to Mobile money services among rural residents in Western Uganda

Mobile money accessibility was found to be influenced by several factors that include limited infrastructure, affordability, literacy and perceptions of trust. Whilst most participants acknowledged the central role that mobile money plays in their daily financial lives, they also highlighted the persistent logistical and cost barriers that continued to limit access particularly in rural settings or those that are less educated.

The following themes emerged from the respondents and are detailed below.

- Structural and Infrastructural enablers of Access
- Affordability and service limitations
- Awareness and socio-cultural considerations
- Perceived value and trust in mobile money services.

5.2.1 Structural and infrastructural enablers of access

This theme reflects how mobile money rails including physical, technological, and organisational aspects enable or inhibit user ability to access the services. These include agent distribution, network coverage and liquidity systems.

Majority of the respondents highlighted infrastructure as a one of the determinants of accessibility. Whilst many respondents in rural and semi-urban communities acknowledged the presence of mobile money agents in their remote trading centres, they highlighted several challenges like the long distance to access the agents, liquidity shortages, and unstable networks that affect access. Some of the users noted as follows.

> *“Not easy because my house is not near the main road. I sometimes take a boda boda to reach an agent. But when I get there, they help me.” (Respondent 12)*

"There is only one agent in our area, so sometimes I have to travel to another place to access services." (Respondent 11)

These respondent accounts demonstrate how physical accessibility links with digital connectivity to affect inclusion. For many, the ability to transact depended on their proximity to agents and on network stability yet both are without their control and unpredictable. The issue of network instability also featured prominently across respondents, including agents:

"The mobile network is often unstable, and theft is a major issue in the area. There are many thieves who target agents." (Respondent 3)

However, some respondents also recognised infrastructural progress. One service provider highlighted the increasing collaborative models by the telecommunications companies to manage liquidity and expand rural coverage:

"We introduced a franchise model where Airtel Money branches ensure sub-agents have enough float. Agents can also replenish float through partner banks or inter-agent float sharing." (Respondent 8)

This illustrates that service providers appreciate and are adapting to the nuances of rural settings. Despite the interventions by the service providers, the infrastructure gap remains a key determinant of user perceptions around accessibility.

5.2.2 Affordability and service limitations

This theme addresses the cost-related and operational challenges that influence mobile money use cutting across transaction fees and charges, insufficient liquidity, agent commissions, and system intermittence. Whilst some respondents appreciated the convenience that mobile money provides, cost emerged as a recurring concern. Many felt that the transaction fees were quite high and as a result, limited the volume and value of transactions they could make.

"The main challenge is high transaction charges. Sometimes the network is poor, and transactions fail." (Respondent 4)

"Charges are high, and if one agent has no float, I must go to another far away." (Respondent 11)

Some Agents also described low commissions and liquidity stress as barriers to service continuity:

"Increase the commission rates for agents to improve profits and sustainability." (Respondent 3)

Affordability for these users was directly linked to financial inclusion with several participants describing mobile money as essential but not always financially viable for transactions of small value. Liquidity shortages further compounded the issue especially in circumstances where agents had insufficient liquidity to serve the users forcing them to incur additional costs in transportation to the next agent.

"Sometimes the agent does not have enough money for withdrawals, and I must go back another day." (Respondent 10)

Mobile money enhances financial inclusion by reducing the requirements for participation however, its fees and liquidity constraints limit access for those that are still under privileged. This remains an issue that needs to be addressed given its effect on accessibility.

5.2.3 Awareness and socio-cultural considerations

Awareness, literacy and social context shape a user's engagement with mobile money from their first encounter to the societal norms that influence their use of the service/platform. Social networks, local, news media, and direct agent outreach are avenues that have been instrumental in creating awareness of mobile money services within Rukungiri. For many respondents, the maiden interaction with mobile money service was through social networks and relations as opposed to advertisements from the telecommunication companies.

"My neighbour Florence told me about it. Also, in the market, people were talking about it and there were posters." (Respondent 12)

"I learned about it from my sister. She wanted to send me some money, and she told me to go to an agent to withdraw it." (Respondent 11)

This suggests that for rural settings, awareness channels when implementing technology initiatives should include word of mouth and social networks as evidenced by the feedback obtained from the respondents. Some other respondents recalled exposure through mass media and local advertising:

"Through radio, TV, and newspapers. Agents also came to advertise and inform us in the villages." (Respondent 2)

Despite the seemingly widespread awareness, there are still literacy gaps in as far as technology is concerned within the rural areas, minimising usage levels as a result. Agents reported that users often made errors due to unfamiliarity with transaction procedures:

"Some customers do not know the correct numbers of the people they want to send money to… Others forget or do not check recipient names before confirming transactions." (Respondent 9)

In addition, Socio-cultural factors also positively affected participation e.g. trust within family networks. Several respondents alluded to family encouragement which fostered adoption. One respondent remarked:

"My daughter introduced me to it and encouraged me to use it. Family members often send me money, which influenced my continued use." (Respondent 10)

Information is transferred through relationships and particularly so within rural communities as highlighted above through the respondents' direct quotations. Family and colleagues will recommend service once they have performed successful transactions and trust it.

5.2.4 Perceived value and trust in mobile money services

This theme reflects the benefits that users obtain from the use of mobile money services including its functionality, ease and convenience. In addition, as well is the

trust and reliability that they have in the in the system. Most participants expressed strong appreciation for the convenience and efficiency that mobile money offers:

> *"It is easy. Agents are available, and I find it convenient to use my phone for sending and receiving money." (Respondent 2)*

> *"I find it easier to send money on the phone than going to town." (Respondent 6)*

However, with regards to trust, user perceptions were conditional and mainly influenced by their experiences with security features or when errors had occurred. Some respondents singled out a recent system update that enables users to view recipient names prior to sending money. This had greatly improved experience and confidence in the service:

> *"Previously, the system did not show the recipient's name before sending. But this has been rectified, and now you can confirm the name before sending." (Respondent 2)*

A few remained cautious about future reliability:

> *"For now, yes, I think it is safe. But I am not sure how it will be in the future." (Respondent 2)*

Most respondents exercised caution and duty of care whilst transacting and highlighted some self-protection mechanisms to mitigate risk:

> *"I double-check recipient names and numbers before sending money, and I never share my PIN." (Respondent 4)*

Reliability in the service is therefore a function of experiences using the service. The higher the number of safe encounters transacting with the system, the higher the confidence and reliability. Despite this, users were still anxious about potential fraud, transparency of data and potential system failures in the future.

The themes together highlight the dependency that mobile money has on infrastructure, affordability, awareness and trust. Users can transact when the network is stable, and agents have sufficient liquidity. We have also noted that

infrastructure alone doesn't guarantee access and that affordability challenges limit inclusion for under privileged users. Awareness and social learning also affect accessibility but moderated by literacy and cultural acceptance. Lastly, mobile money service should provide additional value to the end user. They must find it relevant and reliable for sustained use. This suggests that inclusion is more than structural but encompasses relational and psychological aspects.

The findings above therefore emphasize the relationship that accessibility, affordability, awareness and assurance have on financial inclusion in rural communities within Western Uganda.

5.3 Cultural influence on mobile money usage in western Uganda

The second research question focused on establishing whether culture, society practices and family relations shape the use of mobile money in rural areas within Western Uganda. Most respondents highlighted the importance of digital financial solutions and acknowledged that they are becoming more embedded in their daily lives. Whilst traditional norms like gender roles and trust still influence financial behaviour, these are slowly changing through experiences, peer influence, learning and adaptation. Three inter-related themes evolved from the data as highlighted below.

- Social and cultural integration of mobile money,
- Social networks and gender related influences on adoption
- Cultural preference for cash.

5.3.1 Social and cultural integration of mobile money

This theme explores how mobile money has been integrated within community routines and whether it is part of day-to-day activities. It goes beyond the initial reservations of the system at inception and focuses on whether the communities have accepted the service as a financial services platform.

Majority of the respondents were aligned on this, and a majority concurred that mobile money was instrumental in their daily lives. Initial doubts around safety of funds had been quickly erased given its convenience and reliability. Most respondents were quoted using words like,

"now everyone uses it" or "it is part of life."

In addition, with respect to cultural beliefs and their influence (if any) on mobile money usage, some of the respondents were quoted as follows.

> *"There are no traditional beliefs influencing my use of mobile money." (Respondent 4)*

> *"No, there are no traditional beliefs that affect my use of mobile money." (Respondent 6)*

> *"People used to think it was for the educated, but now even elders and farmers use it." (Respondent 2)*

Community leaders and telecom representatives attributed this to the deliberate efforts in place to increase awareness:

> *"We work with local leaders to mobilize communities for awareness campaigns and new product launches." (Respondent 8)*

Mobile money therefore compliments existing culture. It enables users send and receive money, pay utility bills and school fees. It also offers users access to savings and micro credit services digitally without affecting social and cultural traditions of the community. Respondents also noted that older generations in more rural areas still find it challenging to use the system and occasionally rely on younger relatives and family to transact.

5.3.2 Social networks and gender related influences on adoption

This theme explores how relationships with family, peers and gender considerations shape both the adoption and control of mobile money services. It shows that the spread of ideas happens mainly through social connections built on trust, through this can be influenced by traditional gender roles. Some respondents noted that their initial awareness of mobile money was through family connections while others were introduced by friends who had previously used the system.

> *"My daughter introduced me to it and encouraged me to use it. Family members often send me money, which influenced my continued use." (Respondent 10)*

“I learned about it from my sister. She wanted to send me some money, and she told me to go to an agent to withdraw it.” (Respondent 11)

“Neighbours and friends helped me the first times I was sending money.” (Respondent 12)

This was corroborated by some of the Agents who noted that many users that are new to the service were accompanied by relatives who guided them through the transactions. Adoption of mobile money, therefore, spreads mainly through social acceptance and recommendations rather than corporate awareness initiatives. However, respondents also pointed out that gender based financial hierarchies are still prevalent. Several respondents noted that men controlled the family finances:

“Many believe women should not receive money directly. Often, money is sent to the man’s phone, and he withdraws it to give the woman.” (Respondent 9)

“Even when a woman owns the phone, she may still come with her husband to make withdrawals.” (Respondent 9)

Such patterns highlight how cultural norms about male financial authority continue to influence digital participation despite positive signs of change. Female respondents highlighted the increasing independence from their spouses whilst others reflected on the confidence they now possess when transacting

“I receive and send money myself. My husband is okay with that now.” (Respondent 4)

“Before, I feared pressing wrong buttons, but now I can do everything.” (Respondent 6)

Gender influence on adoption is fluid; however, mobile money is also changing those traditional power relationships (like male dominance over finances) over time.

5.3.3 Trust and cultural preference for cash

This theme highlights the strong preference for cash that is prevalent in rural areas within Western Uganda and the conservative attitude towards the use of digital

systems like mobile money. It shows that people feel an emotional and cultural comfort with cash which they are familiar with and view as a symbol of wealth and security. Although respondents acknowledged the ease of use and efficiency of mobile money, many re-affirmed their preference for cash. The feeling of "having money in hand" was reassuring.

> *"Some people still prefer cash because they do not trust electronic money." (Respondent 5)*

> *"Local people still prefer cash, as many need to convert mobile money into physical cash to conduct business." (Respondent 7)*

> *"If you don't have hard cash, people think you have no money." (Respondent 7)*

Some agents and service providers noted that even the more regular users of the system made cash withdrawals immediately after receiving funds on their digital accounts showing that their adoption was partial. They also noted that customers also rarely kept large balances on their digital accounts. The continued preference for cash is a cultural way of retaining a sense of control and security over resources as opposed to a rejection of technology. Some respondents associated this mistrust with literacy levels or previous experiences with errors and fraud. A farmer explained:

> *"I trust it, but I fear maybe one day it will fail, and we lose everything." (Respondent 2)*

These sentiments affirm the contribution of user experiences and social acceptance in ensuring that digital solutions are trusted. Mobile money is becoming part of everyday life and customer base expanding through social networks, despite continued preference for cash and control that remains. This is a gradual shift for the community. As confidence levels with the system improve through relationships and positive experiences, social acceptance will also improve.

Some respondents repeated similar narratives of normalisation and family influence for the last 3 interviews. Overall, the findings suggest that cultural factors in rural Uganda are no longer major barriers to financial inclusion. Instead, they form the backbone through which digital finance is understood and adopted. Acceptance

of mobile money happens through observation, teaching, and adaptation demonstrating that financial inclusion depends not only on technological but about people and society.

5.4 Impact of mobile money on financial and economic behaviour

Mobile money has significantly shaped the financial and economic behaviour of rural residents in Western Uganda. Majority of the respondents noted that it has changed their spending and borrowing habits, as well as the way they manage their businesses. They also note that while it has improved access to financial services and efficiency of business operations, it has also increased their unplanned spending. Mobile money users still prefer to keep their money in cash rather than in digital form. Four interrelated themes emerged from the data:

- Business growth and transaction efficiency
- Convenience and financial management practices,
- Financial and consumption behaviour,
- Risk reduction and security handling.

5.4.1 Business growth and transaction efficiency

This theme shows how mobile money has enabled trade and business in rural communities. It has made transactions easier and connected users to other markets. Many respondents acknowledged that mobile money had made it easier to make business payments. Both farmers and agents acknowledged that it was convenient and had also mitigated some risks associated with carrying physical cash. They also mentioned that it had also enabled them to grow their businesses by reaching more people.

> *"It has helped me with my farming business, particularly in making payments and receiving income more efficiently." (Respondent 2)*

> *"Mobile money has made transactions easier and faster. It reduces risks associated with carrying cash and allows people to bank without visiting physical banks." (Respondent 7)*

Agents and business users also highlighted efficiencies they had obtained from making instant payments and remote transactions. For instance:

"I regularly send and receive money, make payments, and occasionally save using mobile money." (Respondent 5)

Several respondents highlighted the important role that digital payments make to enable trade, especially when purchasing goods and paying salaries. For many, this has reduced their reliance on cash and improved how they keep financial records. However, some challenges are still prevalent with several users pointing out that the success of mobile money as a business tool is dependent on the availability of network coverage and agent liquidity. When agents run out of float or when the signal is weak, business transactions are delayed:

"Access is fair, but sometimes agents run out of cash or the network is unstable." (Respondent 4)

In summary, respondents indicate that mobile money has improved the way they do business by making trade smoother both within and beyond local communities. However, infrastructure and service affordability remain a challenge.

5.4.2 Convenience and financial management practices

Mobile money has reshaped the way individuals manage their finances. Respondents acknowledged the simplicity and convenience of handling income and expenses through mobile money platform. In addition, majority also explained that the service allows them to decide when and how to make transactions, giving them a stronger sense of financial control. Convenience and safety were repeatedly mentioned as key factors driving its regular use.

"It has made money management easier but also makes me spend more because money is so easily available." (Respondent 2)

"I use it to save some money. When I wash people's clothes in the village, I save the money I earn on my phone." (Respondent 12)

Many respondents explained that mobile money allowed them to save and make quick payment transfers without needing to travel to the trading centre. The easy access to funds also enabled them promptly to respond to emergencies and cover school related expenses whenever these occurred:

“I can receive money anytime and withdraw when I need it. It helps me save and keep money safely.” (Respondent 11)

At the same time, respondents recognised that ease of access to funds sometimes encouraged unplanned or impulsive spending, making it harder to save money. This illustrates that while mobile money offers greater convenience, it can also reduce financial discipline. Respondents with businesses advised how mobile money had helped them to maintain greater discipline in maintaining their financial records and how it had made it easier to separate personal and business finances.

5.4.3 Financial and consumption behaviour

Mobile money has changed the way people manage their finances. Whist it has improved financial management; it has also brought about certain new risks. Respondents provided mixed views around their behaviour patterns with many appreciating the easy access to funds and using the service often while others were still being careful how they used the service. Several respondents said they mainly used mobile money to keep money for short periods and to make quick payments, rather than for purposes of saving.

> *“I* save a bit informally on the phone. I haven’t borrowed through mobile money yet, but I would consider it if needed.” (Respondent 10)

For others, mobile money created opportunities to start small businesses to generate income.

> *“Apart from washing clothes, I also do small farming. I started my small garden using money I earned from washing work. So, mobile money has helped me start and grow my farming business.” (Respondent 12)*

However, several participants noted that the easy access to money through mobile platforms made them more likely to spend unnecessarily, thereby affecting their ability to save.

> *“Yes, it has changed how I use money. I tend to spend more because it is easy to access funds.” (Respondent 4)*

Despite this, the respondents appreciated the convenience provided by mobile money, especially for those with inconsistent incomes. Mobile money has enabled users instantly to send and receive money, make payments for school fees and household expenses. This demonstrates an improvement in how people manage their daily finances.

Borrowing practices were different among respondents. While some have taken up the credit facilities, majority haven't and are avoiding borrowing through these platforms given the perceived risks.

> *"I avoid borrowing because I fear being unable to repay." (Respondent 6)*

> *"I have borrowed once using mobile money and repaid through my account." (Respondent 11)*

Majority respondents were generally cautious when it came to borrowing. They appeared to be aware of the associated risks to the borrower and as such, they were not comfortable taking up this offering.

5.4.4 Risk reduction and security handling

Mobile money has reshaped people's views around financial safety, especially by reducing the physical risks linked to carrying cash and offering new ways to complete secure transactions, mobile money has reshaped people's views around safety of financial transactions. Some respondents noted that fears of theft, loss, and personal insecurity were key reasons they started using mobile money.

> *"Mobile money has made transactions easier and faster. It reduces risks associated with carrying cash." (Respondent 7)*

> *"It minimises risk from cash." (Respondent 7)*

Enhanced features that enable users to view name of recipient prior to transaction have further improved people's perceptions of the safety of the service.

> *"Previously, the system did not show the recipient's name before sending. But this has been rectified, and now you can confirm before sending." (Respondent 2)*

Many respondents also mentioned the need to take extra care to ensure accurate data capture or to ensure PINs are not compromised.

> *"I double-check recipient names and numbers before sending money, and I never share my PIN." (Respondent 4)*

For other respondents, the sense of security was derived from using agent services of those known to them. One respondent noted:

> *"I only use one agent in town, and she is my cousin, so I trust her. I don't go to other agents because I fear them." (Respondent 12)*

Whilst respondents highlighted instances of fraud and loss, they generally found mobile money services to be secure and a less risky option than when dealing with physical cash. They have also found ways of mitigating fraud and loss risks.

These findings show that mobile money has significantly changed financial and economic behaviour by a) improving income flow and participation in trade activities b) introducing convenience and efficiencies making transactions faster and more self-directed c) enhancing financial empowerment albeit the emerging tendencies surrounding impulsive spending d) providing safety and control resulting from reduced dependence on physical cash.

Overall, the findings suggest that mobile money's influence extends beyond improving access to financial services. It has changed how the community views and utilises with money in their daily lives.

5.5 User perceptions around security and trustworthiness of mobile money services in western Uganda

The fourth research question explored users' perceptions around system safety, reliability, and trustworthiness as they carried out financial transactions every day. Digital and physical security concerns were raised, and both were key to shaping their confidence levels and continued use of mobile money services. Respondents raised concerns about fraud, theft, and the safe custody of their personal information. Their feedback suggests that positive experiences whilst using the system and being careful when transacting improve trust and confidence in the system.

Five key themes were highlighted from the data as follows below.

- Evolving trust and user vigilance,
- Fraud and security risks,
- Institutional and systemic safeguards,
- Public education and awareness,
- Perceived safety and comparative advantage.

5.5.1 Evolving trust and user vigilance

Users trust in the system was conditional and a factor of the more positive experiences encountered together with caution exercised when using the system. Across the interviews, respondents shared this view

> *"I think it is safe because I have never lost any money." (Respondent 12)*

> *"I double-check recipient names and numbers before sending money, and I never share my PIN." (Respondent 4)*
> *"I trust it, but I fear maybe one day it will fail, and we lose everything." (Respondent 2)*

These quotations from the users highlight a form of conditional trust, in which confidence in the service is dependent on the users' own vigilance like safeguarding your PINs, verifying phone numbers, and avoiding unfamiliar agents. Additionally, positive experience also features in the feedback as a key determinant. Agents and business owners concur with this. One respondent explained:

> *"Some customers do not know the correct numbers of the people they want to send money to… Others forget or do not check recipient names before confirming transactions." (Respondent 9)*

5.5.2 Fraud and security risks

Users and agents shared experiences of fraud, theft, and other security threats, both physical and digital that they had encountered. These views highlight the everyday challenges that influence user perceptions of the risk posed when using mobile money. Respondents described different forms of financial crime that affected both the users and agents. For Agents in particular, physical theft was highlighted as a key concern

“The mobile network is often unstable, and theft is a major issue in the area. There are many thieves who target agents.” (Respondent 3)

Users described experiencing or witnessing fraud through mistaken transactions, counterfeit messages, or scams. Respondents further described their experiences with the different types of fraud like mistaken transfers, fake confirmation messages, and various phone-based scams.

“Fake transactions sometimes occur, and customers must be careful to avoid falling victim.” (Respondent 3)

“My neighbour once said her money was stolen.” (Respondent 12)

Several participants also associated the risk of fraud with limited digital or financial literacy.

“People fear sending money because they are not sure how it works. Some can’t read the messages well.” (Respondent 9)

This suggests that perceptions around fraud are closely linked to knowledge gaps thereby reinforcing the importance of literacy and awareness in building and enhancing trust for the system

5.5.3 Institutional and systemic safeguards

Telecom companies, banks, and regulators were seen as key players in managing security risks through their infrastructure, policies, and customer support systems. Respondents viewed them as pivotal in providing the necessary support and protection mechanisms to resolve their challenges. Majority of the users were cognisant of the efforts that telecommunication companies had made to protect them from system related frauds and other challenges through measures like name and number verification, system updates, and accessible customer service. They noted that.

“Previously, the system did not show the recipient’s name before sending. But this has been rectified, and now you can confirm the name before sending.” (Respondent 2)

“If the problem is system-related, they can trace and lock the affected account.” (Respondent 9)

The service provider highlighted other measures that they had taken to proactively protect the users:

> *"We introduced PIN validation to reject weak passwords and run awareness campaigns. We also provide fraud-reporting hotlines and allow users to lock their accounts remotely if their phones are stolen." (Respondent 8)*

Such measures have further strengthened users' trust in mobile money systems. The respondents however, also pointed out, in event losses occur from physical theft or data capture issues, the support rendered is minimal. This underscores the boundary between corporate responsibility and individual risk.

> *"If it is physical theft, it becomes more difficult — they mostly advise us to report to the police." (Respondent 9)*

Although institutional safeguards help build confidence in mobile money systems, there is room for improvement when it comes to accountability especially in rural areas where coordination between telecom operators and local law authorities is limited and uncoordinated.

5.5.4 Public education and awareness

Community awareness activities, media coverage, and social learning are instrumental in shaping users' understanding of security and in strengthening their confidence in mobile money services. Many respondents linked their trust in the service to their literacy levels. Respondents found radio programmes, church announcements, and community meetings valuable sources of information on safe mobile money practices.

> *"We conduct radio and newspaper awareness campaigns, teach customers to recognise phishing messages, promote safe PIN practices, and provide fraud-reporting hotlines." (Respondent 8)*

Community leaders also called for closer collaboration between mobile service providers and local institutions to strengthen public education and promote safer mobile money practices and usage.

"Service providers can integrate their field activities within churches to reach communities about the use of mobile money." (Respondent 7)

Family and social networks also played an important role in enhancing knowledge. Many respondents said they had taught others how to use mobile money safely, often starting with family members within their own households. For example:

"My husband taught me how to avoid such things." (Respondent 11)

Awareness is shaped by culture and community circumstances and both formal and informal learning opportunities are critical to building trust amongst mobile money users.

5.5.5 Perceived safety and comparative advantage

Respondents largely viewed mobile money as safer bet to carrying or storing physical cash, despite the risks associated with it. The feedback they shared reflected a preference for digital transactions over physical cash, given its convenience and lower exposure to physical thefts. Some respondents described mobile money as offering a more secure way to handle their finances.

"Mobile money has made transactions easier and faster. It reduces risks associated with carrying cash." (Respondent 7)

"It minimises risk from cash." (Respondent 7)

Women appreciated its sense of privacy and the control that it provides over their personal finances.

"I only use one agent in town, and she is my cousin, so I trust her. I don't go to other agents because I fear them." (Respondent 12)

A few respondents were however unsure of whether mobile money systems would remain secure in the future given the changing technology and fraud landscapes.

"For now, yes, I think it is safe. But I am not sure how it will be in the future." (Respondent 2)

This further emphasizes the need for continued favourable user experiences if preference for digital systems like mobile money is to be enhanced.

The findings demonstrate the influence that relationships, experience and context have on security perceptions with mobile money. Trust is earned through positive everyday experience, social influence, and confidence in institutions. They also underscore the following: a) Institutions work alongside individual caution and vigilance to protect users from fraud and b) Awareness and literacy are key to restoring confidence in the system. Respondents (including customers, agents and community leaders) all trusted the system despite its weaknesses. Mobile money solution is considered safer than handling cash, but this depends on individual vigilance and the effectiveness of service providers in addressing the key challenges.

5.6 Recommendations for improving mobile money services from the respondents

Mobile money has played a significant role in expanding financial access in Western Uganda and all respondents acknowledged this. Despite this, they also shared recommendations on the key areas requiring further improvement based on their daily experiences. These included the need for stronger governance, economic sustainability, social empowerment, and more reliable technological infrastructure. The four themes listed below evolved from the respondent's feedback and are key to ensuring sustainability of mobile money services.

- Enhancing Regulatory Oversight and Fraud Prevention
- Incentives and Service Improvements
- Promoting Financial Literacy and Inclusion
- Strengthening Infrastructure and Access

5.6.1 Enhancing regulatory oversight and fraud prevention

Respondents pointed out the need to strengthen governance within the sector. They recommended stronger regulation and closer supervision of the key players (including agents and telecommunication providers), stricter enforcement of SIM registration and other actions to combat fraud and theft. This they argued, would improve user confidence in the system and ensure sustainability of the services in the future. The respondents, particularly the agents, called for stronger accountability measures to prevent fraud.

"They should enforce SIM registration properly so that each line belongs to the right person. Some fraud comes from unregistered or fake names." (Respondent 9)

Respondents emphasized the need to address both digital and physical forms of fraud. They were concerned with the increasing thefts at mobile money agents given that it discourages further investment in the service and undermines trust.

"The mobile network is often unstable, and theft is a major issue in the area. There are many thieves who target agents." (Respondent 3)

"If money is wrongly sent, there should be faster recovery and clear follow-up from the telecoms." (Respondent 4)

The representative from the telecommunication providers highlighted some initiatives that had been implemented to protect the customer and improve management of fraud

"We introduced PIN validation, awareness campaigns, and hotlines. Customers can also lock their accounts remotely if their phones are stolen." (Respondent 8)

Increased collaboration amongst all key stakeholders was another recommendation from the respondents in a bid to strengthen consumer protection.

"Sometimes we report cases, but nothing is done. Telecoms and police should work together." (Respondent 7)

5.6.2 Incentives and service improvements

The respondents also made recommendations that would ensure that mobile money services are more accessible, customer centric, reliable and affordable for the users. Extending of agent outreach, addressing insufficient liquidity at agents, lowering transaction fees, improving service reliability were some of the recommendations made with quotes as below.

"The main challenge is high transaction charges. Sometimes the network is poor, and transactions fail." (Respondent 4)

"The charges are high, and if one agent has no float, I must go to another far away." (Respondent 11)

Agents called for better commissions and support to ensure adequate liquidity:

"They should increase the commission rates for agents to improve profits and sustainability." (Respondent 3)

"Telecoms should help agents manage float. Sometimes we lose customers when we have no cash." (Respondent 9)

The telecommunications provider however confirmed that there were already efforts underway to address the liquidity challenges at agents:

"We use a franchise model where Airtel branches support sub-agents with float. Agents can also top up through partner banks." (Respondent 8)

The respondents also noted the need to increase transaction limits to enable users, particularly businesses, to carry larger value on their wallets in a bid to facilitate business operations and trade in the area.

"They should increase transaction limits for business people who handle more money daily." (Respondent 9)

Incentives and service improvements are critical for mobile money to thrive. The services should be affordable to the users, and they should derive benefit from its usage. In addition, the agents should also receive an adequate financial return through the service otherwise it ceases to be an attractive business venture.

5.6.3 Promoting financial literacy and inclusion

Continuous awareness and inclusion activities within the community are instrumental to improve understanding of mobile money services which ultimately improves take up and adoption. It also equips users with useful information to protect them from fraud and theft attempts. Respondents were consistent in highlighting

awareness and literacy as the weak aspects of mobile money services chain. This was evident when inquiring how they first learnt of the services with many respondents pointing to family, neighbours as opposed to through deliberate formal awareness actions.

> *"My neighbour Florence told me about it. Also, in the market, people were talking about it." (Respondent 12)*

> *"My daughter introduced me to it and encouraged me to use it." (Respondent 10)*

Agents attributed errors and fraud losses to lower literacy levels:

> *"Some customers do not know the correct numbers of the people they want to send money to. Others forget or don't check recipient names before confirming transactions." (Respondent 9)*

Respondents also advocated for enhanced collaboration between key stakeholders and local community institutions like churches and SACCOs in a bid to raise digital literacy.

> *"Service providers could work with churches to educate communities about mobile money." (Respondent 7)*

Many respondents also felt that women face social and educational barriers to using mobile money confidently.

> *"Some women fear using it. There should be teaching groups for women so that they can learn together." (Respondent 4)*

Financial literacy and inclusion are therefore important ingredients to enhancing digital finance within the community. Respondents also viewed education as essential to be able to navigate service safely. They advocated for structured awareness activities and collaboration with local institutions to raise knowledge around the system use for its sustainability.

5.6.4 Strengthening infrastructure and access

The respondents advocated for improved physical and technological infrastructure like ensuring network stability, expanding agent coverage, and improving system efficiency. This was to improve accessibility to mobile money services. The recommendations were informed by obstacles that the respondents faced when using the service e.g. having to travel long distances to find an agent, network intermittence etc. When asked about how easy it is to access the services, one respondent noted.

> *"Not easy because my house is not near the main road. I sometimes take a boda boda to reach an agent." (Respondent 12)*

> *"There is only one agent in our area, so sometimes I have to travel far to access services." (Respondent 11)*

These barriers such as the limited connectivity and distance discouraged usage particularly for the more elderly users. Agents also identified network intermittence as a financial risk that disrupted transaction processing and business.

> *"The mobile network is often unstable. Sometimes we lose customers because the system is down." (Respondent 3)*

Several respondents proposed increasing the number of agents in rural areas and improving network collaboration between telecoms to share infrastructure:

> *"We collaborate with telecom companies to share network infrastructure and improve coverage in rural areas." (Respondent 8)*

Others emphasised the need for alternative power sources like renewable energy to minimise system downtime. Adequate infrastructure is essential for the smooth operations of mobile money services. Full financial inclusion cannot be achieved without constant network access, agent availability and proximity. Additionally, affordability of the services and improving user understanding of the system functionality go a long way in fostering inclusion.

5.6.5 Summary or conclusion

The recommendations from the respondents are summarised in the table below together with expected outcome and are all geared at ensuring that mobile money services remain sustainable given the benefit to financial inclusion

Table 5.1

Summary and conclusion

Recommendation	Specific action	Expected outcome
Regulatory oversight and fraud prevention	Strengthen agent oversight, SIM registration	Increased user confidence, stakeholder accountability
Incentives and service improvements	Network stability, enhanced liquidity, agent commissions & profitability, pricing fairness	Sustainability, affordable services
Financial literacy and inclusion	Expanded awareness and training	Empowered, informed user base
Infrastructure and Access	Improved network coverage, agent reach	Reliable, convenient access to services

Chapter 6: Discussion of results

6.1 Introduction

This chapter analyses the insights from the respondents in rural Western Uganda against theoretical and evidence-based frameworks. These insights will also be contrasted against available literature to establish the significance of the findings in alignment with mobile money and financial inclusion

Two key frameworks will be used for the analysis throughout the chapter, and these are Unified theory of acceptance and use of technology (UTAUT) and Technology threat avoidance theory (TTAT). Implications and conclusions will be drawn at the end of each section that are generated from the respondents' insights and backed by theory and past literature.

6.2 Factors facilitating or inhibiting access to mobile money services among rural residents in western Uganda

The findings identified the following four themes under the first research question that are discussed in detail below.

- Structural and Infrastructural enablers of access
- Affordability and service constraints
- Awareness and socio-cultural considerations
- Perceived value and trust in mobile money services

6.2.1 Structural and infrastructural enablers of access

Most of the respondents highlighted infrastructure as the most important part of inclusion. They noted that access to the services significantly depended on proximity to agents, availability of sufficient liquidity at agents, and how stable the network was. Access to resources, support and knowledge are enablers of adoption. This is consistent with the facilitating conditions concept under UTAUT model (Venkatesh et al., 2019).

The finding also confirms Mothobi & Grzybowski (2017) observations that infrastructural challenges like power shortages and network intermittences significantly affect mobile money adoption rates in Africa. It also confirms Johnen et al's. (2023) assertions in Kenya that agent coverage and trustworthiness affect adoption.

Respondent 8, a telecom service provider, however noted that corporations now use initiatives like the inter-agent float sharing to ensure there is adequate liquidity at agents. Such innovations at an industry level are aimed at addressing

rural challenges. This confirms Lashitew et al. (2019) who note that mobile money ecosystems develop when strategic alliances are formed and resources shared.

The feedback from the respondents is similar to other parts of Africa, where, agent numbers and reach are still key ingredients for inclusion (Osabutey & Jackson, 2024; Shaikh et al., 2023). Additionally, views around unstable network connectivity from the respondents also confirm Hamdan et al. (2022), who highlights network intermittence as pivotal to driving usage of digital financial services.

6.2.2 Affordability and service constraints

Whilst majority of the respondents were happy with the convenience that mobile money services provide, they noted the excessive fees and liquidity challenges that could discourage usage. In addition, some agents in the findings also highlighted the lower commissions and the need for these to be revised.

These insights demonstrate the following contradiction in financial inclusion i.e. whilst mobile money enhances inclusion, it is not always affordable. This confirms previous real-life studies have highlighted high transaction charges and float shortages at agents as factors that prospective new users are concerned about and that negatively impact usage rates as well (Ahmad et al., 2020; FSD Uganda, 2024).

As per the UTAUT framework, constraints such as those discussed above, affect the convenience of the service and hence confirming the minimised take up opportunities (Venkatesh et al., 2019). Constraints like affordability are affected by social and economic reality. For example, people who live in rural areas generally have irregular, low incomes, so they view transaction fees as expenses that increase as their income goes down (Mogaji & Nguyen, 2022). Liquidity shortages also demonstrate systemic weaknesses of float management and erode user trust (Osabutey & Jackson, 2024).

There are several opportunities that could be explored to improve affordability of the service and to address liquidity challenges at agent points like tiered pricing etc. Such actions would make service more affordable and accessible to the community consistent with the National Financial Inclusion Strategy (2022–2026) and are further detailed in the recommendation section in chapter 7.

6.2.3 Awareness and socio-cultural considerations

The results show that social networks including family, friends, and neighbours were the most common ways through which people learnt about mobile money as opposed to official advertising. Some of the respondents advised that they had first heard about the services from their neighbours or family.

According to the UTAUT model, individuals embrace technology when there is some form of commendation from their peers (Venkatesh et al., 2019). The feedback from the respondents confirms this. Similarly, this confirms Bongomin et al. (2018) who also noted that mobile money adoption in sub–Saharan Africa is a function of community endorsement.

The results also showed that older and less educated people, struggle to use digital tools. This confirmed observations from Kouladoum et al. (2022) who also substantiate the notion that inadequate digital literacy heightens the likelihood of user error and fraud.

This could point to an increasing need for expand learning opportunities for the residents of the area and one such way that this could be done would be through collaborations with community leaders, groups.

6.2.4 Perceived value and trust in mobile money services

Respondents consistently described mobile money as simple to use whilst others noted that it was still evolving and that they were not sure about its sustainability. This feedback implies that the trust is dependent on sustained positive experiences moderated by anticipated threats. This confirms TTAT's threat appraisal construct (Liang & Xue, 2010). Users are always thinking about how likely and serious such losses are, and they take steps to protect themselves, like name and number confirmations prior to progressing with a transaction and keeping their PINs safe.

These results confirm the findings of Hamdan et al. (2022), who note that the adoption of mobile money increases as people appreciate improvements to the services that strengthen security like confirmation messages. Shaikh et al. (2023) contend that clear and strong regulation fosters trust and so do improvements to existing technology.

Given the above, and because in Uganda, trust is built over time, inclusion becomes a continuous process that is aided by enhanced user trust. Trust is also earned when the services are deemed value adding.

Service providers should be more deliberate about ensuring network reliability, increased awareness around fraud, and excellent customer service. Regulators on the other hand can give the users added protection by ensuring that service providers comply with existing guidelines.

6.2.5 Discussion summary

From the above, we note that access to mobile money is affected by structural issues like physical infrastructure, affordability considerations on financial and economic viability, socio-cultural nuances, awareness and trust which is instrumental for sustained usage. Service availability is therefore only one of several other factors that influence financial inclusion.

These findings from rural Uganda strengthen the UTAUT model and show that people's ability to adopt technology depends on their social connections and cultural norms rather than on formal institutions. Through TTAT as well, it also becomes clear that cautious behaviour, lived experiences and trust shape users' perceptions on risk management.

6.3 Cultural influences on the use of mobile money in rural western Uganda

This section focuses on social and cultural factors and their impact on awareness, acceptance and use of mobile money services in rural Uganda. Despite mobile money being launched in Uganda over 15 years ago, there are still several people that do not use it as expected due to family norms, gender roles, and trust in the community. The results highlighted three connected themes that help explain this:

- Social and cultural integration of mobile money
- Social networks and gender related influences on adoption
- Trust and cultural preference for cash

These themes show that technology adoption expands beyond technical competence and ability but is also influenced by social considerations like cultural acceptance, trust and social hierarchy

6.3.1 Social and cultural integration of mobile money

Some respondents described mobile money as a service that many were reluctant to use initially but gradually accepted it for everyday usage. They had overcome initial fears and understood it much better.

The process of normalisation confirms the part of the UTAUT model on social influence (Venkatesh et al., 2019), which suggests that technology adoption is enhanced when people believe that important people in their lives like family, friends, or valued community members use them. The results show that mobile money followed this path by starting out as an unknown digital tool and later becoming a socially acceptable way to make small financial transactions. Lashitew et al. (2019) argues that adoption is shaped by social learning and community diffusion as opposed to awareness campaigns by the service providers.

Some respondents also highlighted that some senior citizens were still unsure about utilising digital money and still preferred to use cash. This confirms Amoah et al. (2020) who found that generational differences and limited digital exposure make it harder for older people to fully accept new technology.

The results show that community awareness initiatives and learning opportunities are still important aspects of strengthening inclusion however, telecommunication providers need to collaborate with cultural leaders and groups to better trust and embed within the community. Taking advantage of community meetings and other regular gatherings to build capability around mobile money services can help minimise any trust related gaps.

6.3.2 Social networks and gender related influences on adoption

Some respondents consistently attributed first encounters with mobile money service to social networks like family, friends and other community members. This feedback, consistent with the findings of Bongomin et al. (2018) demonstrates that adoption is enhanced by social networks. It also corresponds directly with social impact concept in UTAUT, which refers to peer influence from family or friends that shapes behaviour.

However, respondents also talked about gender-based differences; some women that advised that they primarily used the service to receive money from family members as opposed to using it to manage their own finances. This implies that men's control over family finances may still be prevalent and confirms the findings of Amoah et al. (2020).

Additionally, the data highlighted different uses of mobile money services between men and women with the former inclined to use it for commercial purposes and the later for relational purposes like remittances from family. This suggests that traditional cultural gender roles determine how people make financial decisions.

Some respondents highlighted that mobile money has made women more independent with respect to financial matters. Whilst not in the majority, it confirms similar observations by Asongu and Le Roux's (2023) in sub-Saharan Africa. Whilst GSMA (2023) and World Bank (2022) suggests that the gender gap in the usage of mobile money has reduced, the respondent's feedback differs.

Telecommunication service providers should work with women groups within the community to address any gender related challenges through literacy programs. Regulators and other policy makers should also incorporate gender in their plans for financial inclusion (FSD Uganda, 2024).

6.3.3 Trust and cultural preference for cash

Majority of the respondents expressed confidence in mobile money's ease of use, yet they still preferred to use physical cash. Some highlighted the fear that money would be lost when their phones have been stolen. This uncertainty aligns with TTAT's threat appraisal (Liang & Xue, 2010) which notes that users evaluate anticipated risks like theft and fraud against value drivers like speed and simplicity. For the majority, confidence in the system was derived from consistent positive experiences but could be undone by fraud or increased instances of network failure.

Mogaji and Nguyen (2022) note that people adopt technology given its practicality but still evaluate its performance and reliability through similar measures as traditional systems. Shaikh et al. (2023) support this view and note that whilst mobile money is convenient, traditional conservatism prevents them moving on from cash as a preference.

The preference of physical cash therefore reflects a cautious approach from the users and a continuity of cultural norms to an extent. Cash is real and people view it as safe from uncertainty. Confidence in digital systems will grow when adequate controls have been put in place and tare credible (Hamdan et al., 2022)

Whilst GSMA (2023) notes that trust in digital financial systems has generally improved throughout Africa, the feedback from this study shows that this is not conclusive given the limited scope of mobile money transaction types that respondents currently utilise versus the certainty of physical cash which respondents have used historically.

To foster trust in digital systems, service providers need to be more deliberate around ensuring that their services are reliable and are secure. This can be through interventions like increasing service-related agent outlets, running fraud awareness programs in local languages. These kinds of treatments deal with both TTAT's threat perception and UTAUT's performance expectancy, subsequently improving acceptability.

6.3.4 Discussion summary

Cultural context is an integral part of financial inclusion. The seamless embedment of mobile money services into existing social and cultural systems is essential for its sustained use. The qualitative findings above show the social infrastructure such as trust, learning and empowerment make financial inclusion a reality.

The findings positively contribute to UTAUT theory by illustrating that social influence in communities is both enabling and constraining. Similarly, the findings contribute to TTAT by demonstrating that threat avoidance is culturally influenced, shaped by community narratives and experiences that cut across several generations.

6.4 Economic and financial behavioural impact of mobile money

This section looks at how mobile money has affected the way people in Western Uganda handle their finances. The feedback reflects that mobile money is more than a way to make transactions but also enables small businesses to develop, manage household finances, and reduce risk. This is in spite of existing constraints regarding literacy, affordability, and trust mentioned above. As with earlier themes, this analysis draws on the theories of UTAUT and TTAT together with existing literature relating to financial inclusion and economics within Africa.

6.4.1 Business growth and transaction efficiency

Many respondents described mobile money as a promoter of business. Both farmers and traders were unified in their appreciation of its convenience and simplicity. In addition, they also highlighted that it improved their cash flows. Mobile money creates efficiencies within business operations and improves cost to serve making it easier to penetrate new markets. Batista and Vicente (2023) noted that businesses in rural Southern Africa as an example, increased their profitability and market relevance through mobile money transactions.

Similarly, Amoah et al. (2020) and Ahmad et al. (2020) acknowledge the contribution that digital payments have made in improving cash flows and lowering opportunity costs for small businesses. The findings of the study support this view but are also cognisant of some existential challenges affecting users in rural communities such as agent shortages and insufficient float which, ultimately compromise reliability.

To sustainably facilitate business growth, service providers should look to increase business transaction limits, increase liquidity at agents and connect merchant payment systems within rural markets. Regulators should also encourage digital merchants to use their services by lowering their transaction fees. These interventions would make mobile money more relevant to the community and the economy at large as opposed to only a focus on remittances.

6.4.2 Convenience and financial management practices

Majority of the respondents were complimentary of mobile money services for its simplicity and accessibility with several of them also noting that it enabled them to manage their daily expenses without the need to travel. These actions demonstrate the respondent's adaptability with digital finance. In such rural areas, digital finance and practices have become part of everyday lives (Ahmad et al., 2020). Users view mobile money as a gateway to budget through incremental savings to meet expenses in the short run.

This is in line with effort expectancy within UTAUT, which links sustained usage to simplicity, convenience and perceived control. It also relates to self-efficacy, which underscores the notion that user confidence grows as more transactions are performed. However, some respondents recognised that simplicity and convenience also increased spending. This compliments findings from Aziz & Naima (2021), who observed that digital finance services such as mobile money can increase impulsive consumption given its instant nature. It therefore facilitates and at the same time complicates financial discipline.

Digital technologies enhance financial management and empowerment (Batista & Vicente, 2023). Whilst the findings from the study acknowledge this, they also point out some consumption risks that users face that were highlighted above. Mobile money services should address consumption risks through literacy and other initiatives. They can collaborate with other stakeholders within the industry like Regulators and the local community institutions to deliver this.

6.4.3 Financial and consumption behaviour

Some respondents used mobile money services for purposes of short-term saving, while others saw it as a way to get a credit facility. Ahmad et al. (2020), asserts that mobile money improves cash flows in the short run but does not promote a structured savings culture. Additionally, Amoah et al. (2020) note the limited advancement of financial inclusion if borrowing is constrained by fear or literacy.

The results reveal that individuals that mainly use cash and informal savings are gradually making the shift to digital transactions. This confirms FSD Uganda (2024) which highlights the growing number of mobile money subscribers and remittance transactions in Uganda year on year.

As per World Bank (2022) mobile money is pivotal tool to advance credit within rural areas. Despite this, rural populations remain cautious about borrowing. To ensure sustainability, service providers and local community establishments should collaborate and cocreate to link formal and informal finance. This should be

concurrent with literacy initiatives to alley the ‘fears’ of borrowing. Such interventions will institutionalise savings and borrowing overtime.

6.4.4 Risk reduction and security handling

Mobile money was viewed as a safer option by most of the respondents, particularly those in regions more prone to theft. This demonstrates that some users’ have adapted to security threats. Their confidence in the system is enhanced when they deem the system as reliable through positive user experiences. This aligns with TTAT adaptive security behaviour (Liang & Xue, 2010)

Additionally, respondents viewed mobile money as an alternative to cash which is inherently of a higher risk profile. Shaikh et al. (2023) aligns with this and observed that mobile money reduces exposure to physical risks such as those raised by the respondents with respect to agents’ security.

Whilst existing global studies like GSMA (2023) have emphasized institutional security frameworks, these findings highlight the need for risk mitigation at an individual level such as diligence during transactions, safe storage of PIN together with the need for experience-based learning.

Improved risk management requires both system controls and enhanced awareness interventions at a community level. Literacy interventions around fraud should be provided in local language which is better understood by the community. In addition, a) service providers should endeavour implement and communicate effective recovery policies and b) Regulators should rollout consumer protection guidelines and ensure they are complied with. These will bolster trust levels amongst the users.

6.4.5 Summary

Mobile money changes how people manage and carry out their daily financial transactions such as making expenses, saving and managing risk. This is further enhanced when aspects of infrastructure, affordability and trust are addressed and align with local nuances.

6.5 User Perceptions of security and trustworthiness of mobile money

Mobile money sustainability remains a function of user perceptions around safety and its reliability. The findings from study confirm that confidence in mobile money services are conditional and influenced by experiences e.g. instances of fraud and support offered by service providers to assist the user recover their money.

6.5.1 Evolving trust and vigilance

Most of the respondents noted that continuous safe experiences were a prerequisite for their confidence and trust in the system. This confirms how users adopt strategies to counter potential risks that could affect their usage of the system (Liang & Xue, 2010). These include PIN protection and performing transactions only at agents that they trust. UTAUT framework also augments this through its facilitating conditions concept. Conditions like reliable service and accessible agents enhance trust whilst network intermittence minimise it. Observations across other African countries concur with this and link sustained adoption of the services to consistent experiences post initial interaction (Hamdan et al., 2022; Shaikh et al., 2023).

Telecommunication companies should endeavour to make mobile money services as transparent as possible (GSMA, 2023). As an example, they could implement immediate post transaction text notifications and responsive help lines. Regulators could also ensure that they conduct regular compliance reviews to keep the service providers honest with the guidelines thereby improving user confidence levels.

6.5.2 Fraud and security risks

There was mixed feedback from the agents and users around their fraud experiences. Some alluded to physical thefts and attacks of agents whilst others mentioned the attempts to defraud customers through the system. The feedback reflects multiple avenues through which fraud can occur e.g. physically through theft and digitally via system transactions as highlighted by Mogaji & Nguyen (2022). Users will need to adapt available protective mechanisms like name and number verifications, PIN safety etc to prevent fraud.

Findings confirm that fraud prevalence deters adoption in line with Osabutey & Jackson (2024). Respondents feedback confirmed that even in instances where stolen funds had been recovered, confidence levels in the system had dropped thereby demonstrating that trust is hard to re-build (Ahmad et al., 2020).

Regulators and telecommunication companies should combine efforts when it comes to addressing fraud. Real time transaction monitoring systems to detect and prevent fraud should be implemented together with other interventions advocated by UCC (2024) like sim card registration and biometric verification.

6.5.3 Institutional and Systemic Safeguards

The respondents noted that there was support provided by the service providers if losses occurred. There was clear differentiation between what the provider would assist with and what should be reported to the local law enforcement

agencies. The users therefore found the telecommunication providers to be responsive within the limits of their authority. Ahmad et al. (2020) notes that there should be adequate technical ability and collaboration across industry to ensure adequate oversight mechanisms

From a UTAUT perspective, strong institutional support promotes *facilitating conditions* and subsequently bolsters adoption because users believe they are adequately protected. Hamdan et al's. (2022) observations concurred particularly with respect to trust which was enhanced by the responsiveness of the telecommunication providers.

Policymakers should develop guidelines that support inter agency coordination, mandate insurance for licensed agents and impose minimum consumer protection standards for the industry. This would strengthen transparency and accountability at an institutional level.

6.5.4 Education and public awareness

Respondents acknowledged growing efforts by the telecommunication companies regarding awareness. Majority of the respondents also recognised the need for continuous training particularly amongst the less literate and older generation. This confirms Ahmad et al. (2020) and Kouladoum et al. (2022), assertion that education is critical for sustainable digital inclusion. Mogaji & Nguyen (2022) further confirms that continuous financial literacy initiatives are instrumental to minimises fraud instances.

Although GSMA (2023) reports extensive industry outreach, these findings suggest that there is still a need for continuous awareness if sustainable behavioural change is to be realised. Every effort needs to be made to make these awareness interventions effective including, local language customisations.

Telecommunication providers and regulators should leverage schools, churches, and Savings and Credit Cooperative Organization **(**SACCOs) to increase awareness within the communities. Such efforts would proactively embed these protective measures

6.5.5 Summary

The discussion of user perceptions around security and trustworthiness reveals that confidence and connectivity are important aspects that drive digital inclusion. The insights also expand both UTAUT and TTAT frameworks by revealing that user confidence in financial systems is derived by being diligent when transacting, social learning and from institutional accountability. From the respondent's feedback, the

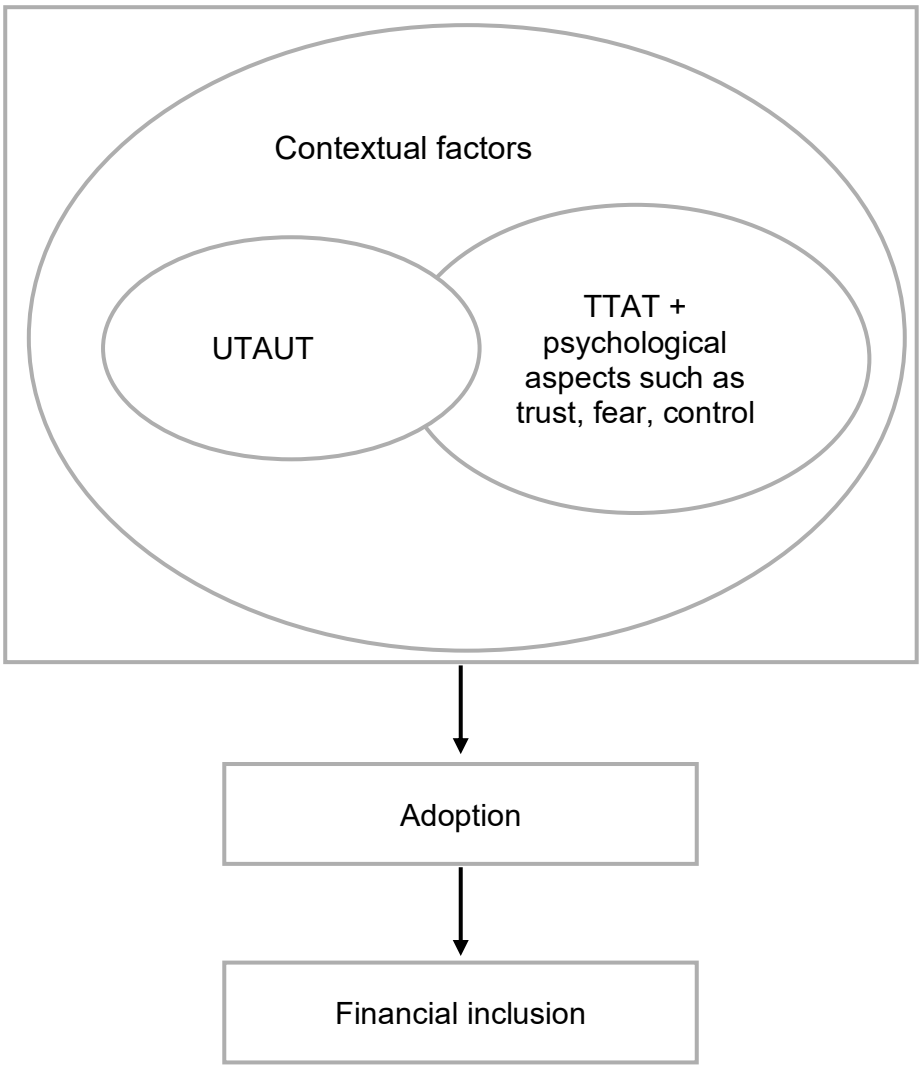
next objective of the telecommunication providers is to garner their trust by embedding security, transparency, and education into the lived realities of rural users.

6.6 Empirical conceptual framework

The refined conceptual framework (Figure 6.1) builds upon the original model presented in Chapter 2 but incorporates additional insights from the outcome of the study.

Figure 6.1

Empirical conceptual framework



Note. This refined framework integrates UTAUT and TTAT with additional psychological and contextual dimensions identified from the study.

The findings revealed that psychological such as trust, fear, control and contextual dimensions like literacy levels, gendered considerations etc significantly influenced adoption and the sustained use of mobile money services.

This is over and above what the UTAUT and TTAT models prescribe. The refined model therefore illustrates that financial inclusion is the product of an interaction of several aspects that include structural access (UTAUT), psychological aspects (TTAT plus emotional overlay), and contextual realities like culture and social environment.

Chapter 7: Conclusions and recommendation

7.1 Introduction

This chapter presents the conclusions from the study that are drawn from the respondent insights, analysed against existing literature, theory and relevance in the world today. The study was premised on appreciating the link between mobile money and financial inclusion for residents of Western Uganda and guided by the Unified theory of acceptance and use of technology and the Technology Threat Avoidance theory.

Twelve in depth interviews were conducted that explored the following aspects of mobile money operations i.e. accessibility, social and cultural influences, economic behaviours and user perceptions around trust and security. These formed the four questions that the research sought to answer.

The conclusions of the study are therefore built around these four research questions. Insights observed from the interviews are summarised per research question and recommendations drawn against them. Contributions to existing literature are also highlighted together with focus for future studies

7.2 Summary of key conclusions by research question

7.2.1 What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?

Infrastructural, economic and behavioural aspects affect access to mobile money to varying extent. Respondents found network stability, adequacy of agent liquidity and user proximity to service points as most impactful. This confirmed Batista and Vicente (2023), who note that addressing network reliability is pivotal to improving inclusion in Africa.

Respondents also mentioned high transaction fees and liquidity shortages as other key determinants that could affect access and usage especially in the area of study which is characterised by many low-income earners. This confirmed Osabutey and Jackson (2024) who found that affordability is a challenge that needs to be addressed to improve access.

Additionally, awareness, literacy and socio-cultural influences also affected access. Existing awareness was found to be inadequate given that majority of the respondents first learnt about mobile money services through their social networks as opposed to formal channels.

Finally, the findings revealed that trust and confidence in the system shapes sustained usage. Whilst respondents were happy with the simplicity and

convenience of the services, they noted that this was conditional and dependant as well on their perceptions around fraud which ultimately affected their confidence levels. Users had to adopt protective measures to mitigate perceived risk which reflects TTAT's threat appraisal mechanism

In conclusion, and as noted above, access is a factor of several attributes and not infrastructure alone. Collectively, they form the foundation of the ecosystem for financial inclusion in rural areas.

7.2.2 How do social and cultural factors influence the adoption and use of mobile money among rural communities in Western Uganda?

The study revealed that local cultural traditions, social networks like family, friends and peers were instrumental in driving mobile money adoption within rural Uganda. This is contrary to existing expectations that this should be driven by telecommunication providers as part of their business performance initiatives. This confirms Lashitew et al. (2019) who note the importance of community learning initiatives in fostering digital adoption in Africa.

In addition, the findings highlighted that mobile money is slowly being integrated within the communities as members acknowledge its usefulness in everyday life. This is despite some instances where patriarchal control is still evident and limiting women's use and control of their own finances. This confirms observations by Aziz and Naima (2021), where gendered norms influence financial behaviour and ultimately inclusion.

Of note as well is that there is still a preference for use of physical cash over digital services like mobile money mainly due to mistrust. This is consistent with findings from Mogaji and Nguyen (2022) and continues to dodge adoption efforts. Whilst the mistrust is more prevalent in older population, the younger population view the services as safe to the contrary.

In conclusion, whilst social networks are pivotal to driving awareness and improving trust, cultural nuances like gender roles and continued affiliations for cash transactions hinder the full realisation of digital inclusion.

7.2.3 What is the impact of mobile money use on financial and economic behaviour among rural users?

The research also revealed that mobile money has been disrupted financial behaviours like savings, spending and risk management. It has facilitated small business growth, created efficiencies within remittance processes and enabled access to credit through savings. This aligns with Munyegera and Matsumoto (2016)

who found that mobile money strengthens financial discipline and liquidity among rural households.

Over and above convenience, mobile money has changed user attitudes around financial transactions. As highlighted above, community residents have been provided an alternative to cash-based transactions that is gradually being embedded within the society. Several respondents indicated that the saving functionality within mobile money services had enabled then manage their expenses despite fear of borrowing that persisted.

The respondents also viewed mobile money as a safer and less risky option than physical cash. This aligns with TTAT's threat avoidance concept in as far as technology adoption is partly motivated by anticipated reduction in risk

In conclusion, mobile money has facilitated transformational changes in financial behaviour as highlighted above. Whilst it has promoted convenience, efficiency, and safety, its sustained benefits are constrained by system design and socio-economic context.

7.2.4 How do perceptions of security and trustworthiness influence the use of mobile money services?

Trust and perceived safety emerged as pivotal to user experience. Most respondents were confident in the security of mobile money systems, but this was conditional and improved per positive experience and whenever there was visible support from the telecommunication companies to resolve errors. As an example, the ability to confirm recipient names before sending money increased their confidence and served as a reminder that perceived safety improves when system is enhanced.

Respondents were cautious when carrying out transactions and, in some instances, relied on only known agents for transacting. This is a relation-based form of managing risks that is consistent with Liang and Xue's (2010) TTAT framework. Importantly, whilst some respondents exhibited confidence in digital systems like mobile money services, others didn't and preferred cash. This was mainly the older population and driven by the uncertainty that digital system present specifically around data privacy and institutional responsiveness.

Users that were more knowledgeable on fraud controls displayed higher confidence operating the system. This underscores the importance of undertaking awareness activities and enforcing accountability to bolster user confidence in the system and continuity of the services (Hamdan et al., 2022).

In conclusion, whilst consistent positive network stability and uptime, better community experiences foster trust in mobile money systems, limited protection and knowledge of processes that handle redress inhibit confidence in the system

7.3 Academic contribution

This study extends the UTAUT framework's application to mobile money in Uganda by demonstrating that user confidence, affordability, and hands on learning are key facilitating conditions in rural communities. It also reflects that users will base their trust decisions as well on feedback from their family, peers and other individuals they look up as opposed to corporate promises. It also views financial inclusion as a process influenced by infrastructure, culture, and confidence. These findings contribute to existing theory that relates to digital technologies and how they shape financial inclusion in developing economies.

7.4 Recommendations and business implications

Sustainable mobile money services rely on a heightened focus on building trust, improving user appreciation of mobile money operations and addressing current impediments to the system. The findings of the study highlighted a number of areas that could be improved and are listed below as recommendations.

7.4.1 Government and policy makers

Improve rural infrastructure and ensure network stability. Based on the findings of the study the Government of Uganda should prioritise improvements to rural infrastructure to minimise network intermittence thereby increasing adoption which Suri and Jack (2016) note is required to foster inclusion.

Explore and encourage network sharing and collaboration amongst service providers. In addition, and because of the feedback from the respondents around the high costs of transactions, the Government can work with the service providers to promote sharing of infrastructure. This would ultimately minimise costs to serve thereby making services more affordable. It would also result in increased network coverage which was a key pain point for the respondents that affects adoption.

Additionally, policy makers need to enforce a tiered pricing model (pay higher for higher amounts and vice versa) to make services more affordable to the low-income earners who transact smaller amounts. This would further enable them to participate in the financial economy. This view is supported by Riley (2018) who notes that affordability and sustained adoption are directly linked among low-income users.

Expand digital literacy and financial awareness Initiatives. The study also highlighted the importance of improved literacy to mitigate risks and for continued confidence in the system. To aid this, Government and policy makers need to collaborate with the local community groups and key stakeholders to continuously educate customers around a) the benefits of mobile money, b) risks of the platform and protection mechanisms, c) charges and fees etc. This will strengthen their resilience against theft and fraud (Ahmed & Cowan, 2021).

Strengthen existing regulation. Given the feedback from the respondents to increase accountability by the service providers and enforce SIM card registration to minimise instances of fraud. Both these actions will improve trust levels with the end users ultimately driving up adoption and inclusion rates.

7.4.2 Service providers

Ensure continued system improvements and service excellence. Service providers should endeavour to continuously enhance their platform to achieve further simplification as well as address network and risk related issues. This could include local language support as an example or more friendly user interfaces or ensuring that there are physical service kiosks that are available within the communities to assist the users whenever they have a concern.

They could also incentivise, empower agents as well as expand agent reach. Service providers need to review and increase agent commissions to attract more agents into the operations. They could peg this to performance to ensure that only those that are providing value are able to take up higher commissions. This would drive up the agent numbers and their reach. Suri and Jack (2016) underscore the importance of having sustainable agent networks if inclusivity is to be realised.

Aligned with recommendations for Government and policy makers, service providers also have a major role to play in ensuring network stability, lower and tiered transaction costs that are consistent with rural settings. The study also recommends that they pay attention to strengthening existing system controls with a view to minimise fraud.

They also need to incorporate gendered dimensions into product and solution creation as one of the ways they are promoting the inclusion of women. In partnership with local leadership within the communities they need to encourage such gendered initiatives to reduce inequality (Suri & Jack, 2016).

Additionally, the study highlighted the importance of social networks in as much as driving awareness and knowledge around mobile money service. Service

providers therefore need to be more deliberate around channelling their message through these networks.

7.4.3 Agents and consumers

Agents and users should continuously participate in learning opportunities that are availed by policy makers, service providers or local leadership. This will ensure their knowledge operations of the platform which will ultimately help them make better financial decisions (Ahmed & Cowan, 2021)

Additionally, users need to exercise vigilance through practices like safeguarding their PIN, ensuring name and number confirmation ahead of transaction etc.

7.5 Limitations of the study

Given the small sample size used for qualitative research, the results from the study are not generalisable to other areas. The insights obtained also reflect nuances from one district in Western Uganda and might not be necessarily applicable to other areas. Additionally, the insights are only limited to the current period given the evolving nature of technology landscape as it relates to mobile money services. Data saturation was arrived at by the twelfth interview as there were no new additional insights from the users of the services. The number of respondents could have been increased if selection of agents, community leaders had been increased. That notwithstanding, the study offers a comprehensive interpretation of how access, culture, behaviour, and trust interact to shape financial inclusion.

7.6 Future research

Any future studies should prioritise extending research over multiple geographies and should also follow a mixed methods approach to also quantify the observations. A comparison between rural and urban users would further enrich findings relating to infrastructure. Future research should also further explore the gendered nuances of mobile money and longer-term impacts of its adoption on individual and household income and entrepreneurship.

Whilst this research has confirmed that there is a relationship between mobile money and financial inclusion, future research could quantify how dimensions of trust, security and confidence influence continued mobile money usage or how mobile money influences economic and financial behaviours.

7.7 Summary

Overall, this chapter has summarised the key insights of the study through theoretical and practical lenses. Mobile money has transformed financial behaviour

in rural Uganda by enhancing access, convenience, and security however, full inclusion is yet to be realised and depends on resolving existing challenges relating to affordability, awareness, and trust.

Financial inclusion is a structural and social process that requires an interplay of technology, policy, and human context. The insights from this study advance academic theory, inform daily operations, and offer a roadmap for inclusion that can be followed by other developing countries.

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Appendix A - Codes to categories

What factors facilitate or inhibit access to mobile money services among rural residents in Western Uganda?		
Codes	**Categories**	**Themes**
Collaboration between telecom providers to improve network issues	Network reliability	Structural and Infrastructural Enablers of Access
Network instability key challenge		
Limited agent coverage	Agent Coverage	
Insufficient agent liquidity	Agent liquidity management	
Decentralised float / liquidity model		
Improved accessibility for remote users	Physical access and geographic inclusion	
Diversified products to improve rural access	Product innovation	
Inclusion of vulnerable populations	Equity and inclusion	
High transaction fees and charges	Transaction costs and affordability	Affordability and Service Constraints
Customers mainly seek to deposit and withdrawal	Functional and economic relevance	
Full usage of the services		
Occasional thefts to users	Operational risks	
Security threats to agents		
Theft is another key challenge		
Digital literacy a factor in driving access	Awareness and digital competence	Awareness and Socio-Cultural Considerations
User error due to low digital literacy		
Service usage cuts across all literacy levels	Literacy levels	
Gender-based access disparities	Gendered considerations	
Higher usage of service with men		
Initial awareness through local media	Awareness diffusion through local communication	
Initial awareness through mass media & agent outreach		
Initial awareness through media and social networks		
Initial interaction with mobile money through family	Familial and social network influence	
Ease of access and convenience	Perceived convenience	Perceived Value and Trust in Mobile Money Services
System enhancements improving user trust	System enhancements	
Provides an alternative to banking	Functional substitution and financial inclusion	
Used for remittances, payments and savings	Functional and economic relevance	
Used for remittances		

How does culture influence the use of mobile money in Western Uganda?		
Codes	**Categories**	**Themes**
Collaboration between service providers and communities	Engagement and collaboration	Social and Cultural Integration of Mobile Money
Community engagement through local leadership		
Cultural acceptance overtime	Cultural normalisation and social embedding	
Absence of cultural barriers		
Encouragement from family	Familial acceptance and influence	Social Networks and Gendered Influences on Adoption
Family comfortable with mobile money		
Absence of family views		
Gender disparities elsewhere	Gendered considerations	
Patriarchal control of finances		
Preference of use of cash due to mistrust in digital systems	Reliance on physical cash	Trust and Cultural Preference for Cash
Still preference for cash in the community		
Women's restricted financial autonomy	Gendered control and financial dependence	
Cultural barriers to women's financial inclusion	Structural and cultural exclusion in financial systems	

How has mobile money impacted the financial and economic behaviour of its users in Western Uganda?		
Codes	**Categories**	**Themes**
Improves business transaction efficiency	Enhanced business operations and trade facilitation	Business Growth and Transaction Efficiency
Used for payment transactions		
Collaboration with local initiatives like SACCOS	Integration with community financial institutions	
Market liberalisation to drive inclusion	Economic expansion and sector formalisation	
No business impact from mobile money	Uneven benefits across enterprise sectors	
Advocate for cashless economy	Promotion of digital transactions and economic formalisation	
Improved financial management convenience	Enhanced financial management and convenience	Convenience and Financial Management Practices
Enables utility payments	Digitalisation of services	
Interim digital storage of funds	Savings and personal financial discipine	
Trust and demographic targeting in agent selection	Trust-driven selection and relationship-based service access	
Encourages savings	Savings and personal financial discipine	
Active borrower and saver	Functional and economic relevance	Financial and Consumption Behaviour
Disciplined borrowing	Controlled credit use and financial prudence	
Easy access leading to increased spending	Consumption stimulation and expenditure tendencies	
Fear of borrowing	Cautious approach	
Self-reliant – no need to borrow	Financial independence and autonomy	
Persistence of informal credit systems	Continued reliance on traditional lending channels	
Reduces risks from carrying of cash	Physical safety and theft mitigation	Risk Reduction and Security Handling
Interim digital storage of funds	Digitalisation of services	
Trust and demographic targeting in agent selection	Trust-based risk assessment	

What are the user perceptions around the security and trustworthiness of mobile money services within Western Uganda?		
Codes	**Categories**	**Themes**
Conditional trust based on personal vigilance	Trust as prerequisite for sustained usage	Evolving Trust and Vigilant Use
Exercise caution when transacting	Risk awareness and self-protective behaviour	
Transact only with known and trusted agents		
Trust essential for financial inclusion	Trust as prerequisite for sustained usage	
Trusts system now, unsure in future		
Transparency and traceability increase trust	Accountability and traceability	
Perceived relative safety	Safety of services	
Perceived safety advantage over cash		
Fraud awareness and self-protection	Fraud instances and mitigation	Fraud and Security Risks
Phishing and digital fraud targeting agents and users		
Prevalence of fake transactions		
Physical risk and vulnerability of agents	Security exposure at operational level	
Multiple dimensions of financial crime	Fraud instances and mitigation	
Loss caused by data capture error	Operational risk and digital vulnerability	
Loss occurred but able to recover it		
Institutional support in digital fraud response	Stakeholder support to mitigate loss	Institutional and Systemic Safeguards
Telecoms support to recover lost funds		
Reliance on law enforcement agencies	External institutional dependency for redress	
Remote account control for theft prevention	Technological protection measures	
No financial loss experienced	Perceived adequacy of institutional security	
Building public trust through education	Confidence-building through awareness	Awareness and Public Education
Community advocacy for digital adoption		
Low literacy levels and mistrust of digital systems	Educational gaps and digital fear	
Privacy and data visibility concerns	Information exposure and user data risks	Privacy and Data Concerns
Multiple dimensions of financial crime (data theft aspect)	Overlap between fraud and privacy threats	

Recommendations		
Codes	**Categories**	**Themes**
Expand agent network	network availability and stability	Strengthening Infrastructure and Access
Improve network stability		
Collaboration with local community initiatives	Local partnerships for network and access expansion	
Enhance agent liquidity management	Operational resiliance and float availability	
Liquidity enhancement at agent level		
Cross-network interoperability	Cost management opportunities	
Agent accountability and regulation	Regulatory supervision and guidelines	Enhancing Regulatory Oversight and Fraud Prevention
Enforced SIM card registration to reduce fraud		
Regulatory reform	Policy modernisation and improved governance	
Strengthen monitoring between agents and telecoms	Strengthen monitoring and fraud protection	
Stronger fraud protection measures		
Increase financial literacy and awareness programs	Building capability through awareness and training	Promoting Financial Literacy and Inclusion
Gender sensitisation in financial inclusion programs		
Collaboration with local community initiatives	Community-based financial education and trust-building	
Satisfied with system and services	Confidence and positive user experiences promoting adoption	
Provide agents with training for improved service delivery	Capacity building and service quality	Incentives and Service Improvements
Improve agent commission rates	Motivation and agent sustainability	
Higher transaction limits for business	Enabling business operations and convenience	
Increase wallet storage limits		
Reduce transaction costs	Affordability and competitiveness	

Appendix B – Sample interview guide

Study Title:

Mobile money services and financial inclusion in rural communities within Western Uganda

Purpose of the Study:

To understand the influence that mobile money services have on financial inclusion within Western Uganda through the perspectives, lived experiences and challenges of the different stakeholders within its ecosystem.

Informed Consent Statement

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I am conducting research that seeks to understand the influence that mobile money services have on financial inclusion within Western Uganda through the perspectives, lived experiences and challenges of the different stakeholders within its ecosystem. Our interview is part of this process and is expected to last about an hour.

Your participation is voluntary, and you can withdraw at any time without penalty. Your responses will remain confidential and cannot be tied back to you. They will only be used for purposes of this study. By participating in this interview, you indicate your voluntarily consent. If you have any concerns, please contact my supervisor or me. Our details are provided below. Thank you.

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SECTION A:

No.	Question	Response
1	Respondent interview number / code	
2	Stakeholder Type *(User/Agent/Community Leader/Provider)*	
3	Age	
4	Gender	
5	Occupation	
6	Level of Education	
7	Sub-county / Village	
8	Do you use mobile money?	Yes / No
9	How long have you used mobile money ?	

SECTION B: CUSTOMERS

1. Usage and Accessibility

1.1	How did you know about mobile money?
1.2	What mobile money services do you regularly use?
1.3	How easy is it to access mobile money services in your daily activities?
1.4	What challenges have you faced when using mobile money services?

2. Societal influences

2.1	Are there any traditional and customary beliefs that affect your usage of mobile money services?
2.2	How have family views and opinions influenced your usage of mobile money?

3. Economic relevance

3.1	Has mobile money changed how you budget and use your money?
3.2	Has it helped you start or grow your business?
3.3	Do you save or borrow with mobile money ? Why or why not?

4. Risk & Security

4.1	Have you ever lost money when using mobile money? If so, how did this happen?
4.2	Do you think that your money is safe with mobile money services?
4.3	How do you ensure you avoid losing money when transacting on mobile money services

5. Recommendations

5.1	Are there any recommendation that can further improve usage of mobile money in the community?
5.2	Are there any other opinions you might have and want to share with us regarding your usage of mobile money services?

TO BE FILLED BY THE RESEARCHER ONLY

Interview Date: _____

Interview Location: _____

Duration: _____ minutes

Language Used: _____

Consent Obtained: Yes / No

Audio Recorded: Yes / No

SECTION C: AGENTS

1. Usage and accessibility

1.1	How long have you been an agent of mobile money services?
1.2	What services do mobile money customers require from you most of the time?
1.3	What challenges do you regularly encounter whilst serving your customers

2. User Behaviour

2.1	What types of people use your services most (age, gender, job)?
2.2	Are there any traditional and customary beliefs that affect the usage of mobile money services?

3. Risk & Security

3.1	Are you aware of any instances of fraud or losses arising from the use of mobile money services? How did this happen?
3.2	Does the telecommunications provider assist you to solve such problems?

4. Recommendations

5.1	Are there any recommendation that can further improve usage of mobile money in the community?
5.2	Are there any other opinions you might have and want to share with us regarding your usage of mobile money services?

TO BE FILLED BY THE RESEARCHER ONLY

Interview Date: _____

Interview Location: _____

Duration: _____ minutes

Language Used: _____

Consent Obtained: Yes / No

Audio Recorded: Yes / No

SECTION D: COMMUNITY LEADERS like Elders, Religious Leaders and Local council representatives

1. Community Observations

1.1	In your opinion, how has mobile money changed financial or economic activity in your area?
1.2	Who do you think benefits most from mobile money, and who is left out?

2. Societal influences

2.1	Are there any community initiatives in direct competition or that complement mobile money usage?
2.2	Are you aware of any cases of mobile money not being used as a result of cultural and or traditional beliefs?

3. Support Role

3.1	How do you as local leaders promote usage of mobile money to the residents within the community?
3.2	Are there awareness or educational campaigns you think will be relevant to further increase mobile money usage?

4. Recommendations

4.1	Are there any recommendation that can further improve usage of mobile money in the community?

4.2 Are there any other opinions you might have and want to share with us regarding your usage of mobile money services?

TO BE FILLED BY THE RESEARCHER ONLY

Interview Date: _____

Interview Location: _____

Duration: _____ minutes

Language Used: _____

Consent Obtained: Yes / No

Audio Recorded: Yes / No

SECTION E: SERVICE PROVIDERS

1. Product Design for Rural Users

1.1	What services or features have you developed specifically for rural communities?
1.2	What are the major challenges to mobile money usage in places like Rukungiri?

2. Infrastructure and Agent Network

2.1	What do you consider when choosing agents in rural areas?
2.2	How do you handle problems such as poor network coverage or low float among agents?

3. Security and Risk

3.1	What are the most common trust or fraud concerns raised by rural users?
3.2	How do you protect and educate users about these risks?

4. Policy, Partnerships & Inclusion

4.1	Do you work with local leaders, government, or NGOs to expand usage?
4.2	What changes would you recommend to improve mobile money penetration and financial inclusion?

5. Recommendations

5.1	Are there any recommendation that can further improve usage of mobile money in the community?
5.2	Are there any other opinions you might have and want to share with us regarding your usage of mobile money services?

TO BE FILLED BY THE RESEARCHER ONLY

Interview Date: _____

Interview Location: _____

Duration: _____ minutes

Language Used: _____

Consent Obtained: Yes / No

Audio Recorded: Yes / No