

**THE ROLE OF MOBILE MONEY ADOPTION IN FINANCIAL INCLUSION
AMONG ADULTS IN UGANDA, EVIDENCE FROM FINSCOPE SURVEY 2023**

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**UGANDA CHRISTIAN
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DECLARATION

I, Namukwaya Jane, hereby declare that this research entitled "The role of mobile money adoption in financial inclusion among adults in Uganda: Evidence from Finscope Survey 2023." is original and unique and it has never been submitted anywhere else in any other university or higher learning institution for any prize. All sources used in this research have been acknowledged and cited in accordance with accepted academic standards.


Signature: 

Date: 14 April, 2026

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APPROVAL

This dissertation titled “The Role of Mobile Money Adoption in Financial Inclusion Among Adults in Uganda, Evidence from Finscope Survey 2023” has been submitted for examination with the approval of my supervisor.

Signature: 
Simon Peter Mukisa

Date: *Tuesday 14 April 2026*

DEDICATION

This research report is hereby dedicated to my family and lecturers who have encouraged and supported me through my academic career. This research is further dedicated to all those people trying to gain financial empowerment and inclusion, their experiences being the source of inspiration for inclusive financial systems in Uganda.

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ABSTRACT

This work looks at how mobile money adoption has contributed to financial inclusion amongst adults in Uganda based on the results of the FinScope Uganda Survey 2023. Although mobile money has now broadened access to financial services, there are concerns on whether the access has been translated to meaningful and sustained financial participation. The gap that the study addresses is that mobile money adoption is conceptualized as a multidimensional construct, covering ownership, frequency of use and service diversity. It is a quantitative cross-sectional research design that uses secondary national representative data. Financial inclusion is measured as a binary variable of financial inclusion and an index measuring the level of use of financial services. Descriptive statistics, bivariate and logistic regression analyses will be used to establish the association between mobile money usage and financial inclusion while controlling for socio-demographic characteristics such as age, gender, education, income, and location. According to the findings, there is very widespread use of mobile money, with 64 percent of the population having mobile money accounts. Financial inclusion access is very widespread, with 87.3 percent of the entire population being financially included. Nevertheless, the findings indicate that the level of financial inclusion is not uniform, and people, on average, use two to three financial services. The empirical results show that adoption of mobile money has a high and statistically significant impact on financial inclusion. It is important to note that frequency of use and service diversity prove to be vital drivers, meaning that active and diversified use of the mobile money services is more critical than ownership. Moreover, socio-economic variables (education and income) have a positive impact on financial inclusion, whereas age and rural location are limiting.

The paper finds that despite the transformative role of mobile money in increasing access to financial services in Uganda, access is not sufficient to lead to meaning financial inclusion. The successful nature of inclusion is dependent on its persistent use and the scope of financial services availed. This paper thus suggests a change in policy emphasis to adopt an access-based approach and encourage active utilization, increase services, and overcome structural obstacles that restrict more intensive financial engagement.

ABBREVIATIONS

FSD	-	Financial Sector Deepening
BoU	-	Bank of Uganda
SACCO	-	Savings and Credit Cooperative Organisation
MFI	-	Microfinance institution
MTN	-	Mobile Telephone Network
UNCDF	-	United Nations Capital Development Fund
NFIS	-	National Financial Inclusion strategy
DFS	-	Digital Financial Services
CAPI	-	Computer Assisted Personal interviewing
UBOS	-	Uganda bureau of Statistics

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter presents the background of study, statement of the problem, research objectives, research questions, scope of the study, significance, justification and the conceptual framework.

1.1 Background of the Study

Financial inclusion is the ability of people in an economy to access and use financial services. It is considered to be a driver of economic growth and the ability to withstand shocks (World Bank, 2021; Chwala, 2024). In the past few years, financial inclusion in Uganda has changed as a result of the phenomenal adoption of digital financial solutions including mobile money delivery services. According to the 2023 survey by FinScope, in Uganda the mobile money transactions were the most used financial service with 64 percent of the population targeting financial inclusion reporting using it in 2023 compared to 56 percent in 2018 (FinScope Uganda, 2024). It has also been enhanced nationwide with notable phone phone growth strengthening the importance of mobile money in the policy of financial inclusion in Uganda. Nevertheless, new pieces of evidence suggest the existence of constraints in the role that mobile money can play in improving financial inclusion. Indicatively, although the adoption of mobile money in the quest to enhance financial inclusion is on the increase, its application in saving, accessing credit and investments remain low (FinScope Uganda, 2024). Emerging evidence indicates that while a significant number of adults save using mobile money, the usage of credit access via mobile money still lags behind savings and transactions (FinScope Uganda, 2024; IMF, 2023). Nevertheless, new evidence suggests that the role of mobile money in financial inclusion could be overestimated when the concentration of its focus is on access metrics only because this does not imply the utilization of various financial products (Financial Sector Deepening Uganda [FSD Uganda], 2025). In any case, simple transactional use is not insufficient to ensure better financial resilience and resistance to economic shocks.

Further, socio-demographic differences are still observed in terms of financial inclusion outcomes. Recent studies conducted on the analysis of FinScope have revealed that the location of mobile money agents, education level, gender, and rural-urban residence are crucial factors influencing digital financial inclusion, with geographical and socio-economic barriers affecting deeper penetration (Chwala, 2024). These studies are in line with the existing literature, which has revealed differences in financial inclusion outcomes between women, rural, and low-income households, as they are observed to use mobile money services for specific purposes rather than for deeper and comprehensive financial inclusion (Lubega, 2024; FSD Uganda, 2025).

Additionally, qualitative findings from similar contexts reveal that operational issues such as network reliability, transaction costs, and digital literacy are additional constraints on the effectiveness of mobile money as a means for inclusive participation in finance (Kabanda and Zikusooka,2025). The above issues, therefore, point to the critical reality that the rapid growth of mobile money usage conceals underlying limitations that restrict its capacity for transformative impacts on finance, particularly for underserved groups.

Overall, the cumulative findings from this study suggest that although mobile money has been important for expanding financial services participation in Uganda, its transformative capacity for meaningful financial inclusion, defined as active usage of a variety of financial products, remains unrealized for the majority of the population in Uganda. This highlights the importance of conducting more sophisticated empirical analysis of mobile money adoption, focusing not just on whether individuals use it or not, but also looking at levels of usage and product variety and linking this to factors of financial inclusion in different forms. This will provide better understanding on how digital financial services can be used for advancing financial inclusion for different groups in Uganda.

1.2 statement of the Problem

The adoption of mobile money services in Uganda has greatly enhanced efforts aimed at enhancing financial inclusion. The use of mobile money by adults has grown in tandem with the proliferation of mobile phones and the extension of agent networks from 2018 to 2023 (FinScope Uganda, 2024). This means that mobile money has become an essential tool in formulating policies geared towards enhancing access to financial services. Nevertheless, there is still uncertainty regarding whether access enhances financial inclusion in terms of actively using savings, loans, and diversified financial services.

Despite the continued adoption of mobile money, empirical data indicates that the use of mobile money is mainly centered on transactional services like peer-to-peer transfers. There have been some advances in mobile savings, but the adoption of digital credit and investment services is still low (FinScope Uganda, 2024; International Monetary Fund [IMF], 2023). It is, therefore, worth noting that the assessment of financial inclusion based on access and account holding could be overestimated. In addition, socioeconomic differences linked to gender, educational level, economic status, and urbanization are still determining factors behind financial inclusion practices (Chwala, 2024; Lubega, 2024).

Previous research on Uganda has predominantly focused on the binary measure of mobile money ownership without considering the frequency of usage and diversity of services offered. Consequently, there has been little research conducted to understand the effects of mobile

money ownership, usage frequency, and diversity on access and depth to financial inclusion in Uganda. This research gap could cause policymakers to overestimate the potential benefits of mobile money technology while underestimating the underlying structural and behavioral constraints in its adoption. Hence, the current research will assess the relationship between mobile money ownership, usage frequency, and diversity on financial inclusion among adults in Uganda through the FinScope Uganda Survey 2023.

1.3 Objectives of the Study

1.3.1 General Objective

The study will examine role of mobile money adoption in financial inclusion among adults in Uganda.

1.3.2 Specific Objective

The specific objectives of the study will be to:

- i. Examine the extent of mobile money adoption among adults in Uganda.
- ii. Examine the level of financial inclusion among adults in Uganda.
- iii. Examine the relationship between mobile money adoption and financial inclusion in Uganda.

1.4 Research Questions

- i. What is the extent of mobile money adoption among adults in Uganda?
- ii. What are the levels of financial inclusion among adults in Uganda?
- iii. How does mobile money adoption influence financial inclusion among adults in Uganda?

1.5 Hypothesis

- i. Mobile money adoption significantly increases the likelihood of formal financial inclusion among adults in Uganda.
- ii. Socio-demographic factors such as age and place of residence significantly influence financial inclusion among adults in Uganda.

1.6 Significance of the Study

This study is significant for several reasons:

a) Policy makers

Offers evidence to the Bank of Uganda, Ministry of Finance, and other government agencies to improve the financial inclusion strategy at the national level.

Assists in identifying barriers and opportunities to leverage mobile money to reach under-served populations.

b) Mobile Network Operators (MTN, Airtel)

Provides insights into customer usage patterns.

Helps improve digital products such as mobile savings, loans, and merchant products services.

c) Financial Institutions (Banks, SACCOs,

Supports collaboration between traditional finance and digital platforms.

Assists in developing products that serve the needs of the unbanked and underbanked populations.

d) Development Partners (FSD Uganda, UNCDF, World Bank)

Offers up-to-date empirical evidence to guide the development of digital financial inclusion programs.

It guides interventions aimed at enhancing financial resilience and fighting poverty.

e) Academic Community

Helps fill the existing gaps in the literature on digital finance.

It also provides a benchmark for future research on mobile money and financial inclusion.

f) General Public

It increases awareness about the potential usage of mobile money services for purposes other than payments, including savings, credit, and security.

1.7 Scope of the Study

1.7.1 Geographical Scope

The study covers all four regions of Uganda Central, Eastern, Northern and Western using nationally representative FinScope 2023 data.

1.7.2 Content Scope

The study focuses on the relationship between mobile money adoption (ownership, usage, service diversity) and financial inclusion in terms of access, usage, savings, credit and resilience.

1.7.3 Time Scope

The study relies on data collected during the FinScope Uganda Survey 2023, reflecting financial behaviours and conditions of that period.

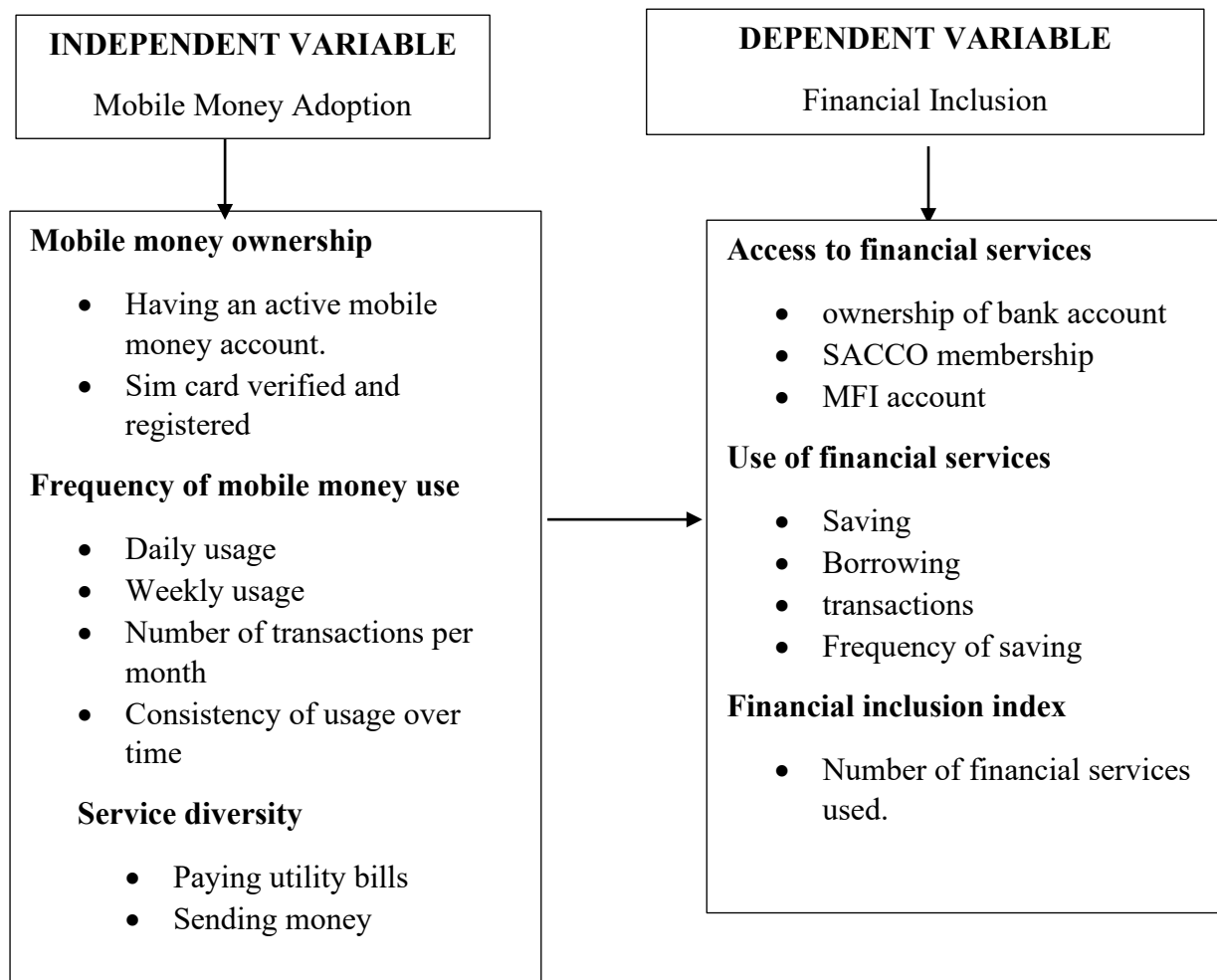
1.8 Justification of the Study

While mobile money has greatly expanded access to financial services in Uganda, there are still gaps in financial inclusion. In order to create strategies that will maximize the positive development outcomes of mobile money usage, it is important to know the relationship between mobile money usage and financial inclusion. The previous research is out dated with the exception of the FinScope 2023 dataset.

Therefore, this study will provide new empirical evidence that can be used in creating new policies, innovating digital products and developing inclusive finance strategies.

1.9 Conceptual Framework

The conceptual framework illustrates the relationship between mobile money adoption and financial inclusion in Uganda. Mobile money adoption is primarily measured through ownership of a mobile money account as an indicator of access to digital financial services.



CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter critically analyses existing literature related to the role of mobile money adoption and financial inclusion. It wants to determine where this study fits into the literature and how it relates to other studies that have explored these topics as well as finding the unresolved issues. This chapter explores definitions of financial inclusion and examines how the definitions used in research studies influence the empirical findings of those studies, will cover theoretical frameworks for how technology is adopted or used (or not used) to participate financially and it will also present an empirical literature review for mobile money and how it relates to financial inclusion globally and in Uganda.

2.1 Theoretical Review

In this part, the following are all the theories related to mobile payments and their effect on being able to provide for your financial needs (inclusive finance). Rather than giving each of these theories an isolated look, these theories will be compared to each other to see how effective they can be to explain mobile payments or use of mobile payments, their limitations, and how they relate to Uganda.

2.1.1 Diffusion of Innovation Theory

Rogers (2003) proposed a theory that decodes how a technological innovation travels through a population over time, based on five attributes: relative advantage, compatibility with existing values, difficulty to use, ability to test/use on a limited basis, and ability to observe how it works. Diffusion of Innovation Theory is applied to mobile money use, it indicates that adoption will happen progressively with the first group of people that adopt influencing other people's acceptance and use of the technology.

The empirical analysis of the diffusion of innovation theory as it relates to mobile money usage in Sub-Saharan Africa shows that users of mobile money are more likely to come from socio-economic groups that are typically more urban, educated and/or have higher incomes; thus, they tend to adopt and use mobile money prior to users from less urban, uneducated and/or lower-income populations (Aker & Mbiti, 2019; Ozili, 2023). This pattern of staged diffusion is also displayed in the context of Uganda, where mobile money is used by many people; however, greater usage of services available through mobile money remains inconsistent or unequal across users (FinScope Uganda, 2024).

Diffusion Theory has been criticized for implicitly assuming that the diffusion process will produce benefits for society. Scholars have argued that not all late adopters will be able to use the new technologies in a way that is beneficial, and that they may only be able to use those technologies at their most basic levels due to resource constraints or low levels of technology skills (Donovan, 2020). This criticism highlights the need to differentiate between the ownership

of a technology and the extent to which the user adopts the technology, which is one of the main assumptions being tested in this study. The research will also look into the frequency of use and the nature of services that users have access to such that we can determine whether the incorporation of a given technology is resulting in high levels of financial inclusion.

2.1.2 Financial Intermediation Theory

Financial Intermediation Theory explains how financial institutions can help facilitate economic activity in several ways including reducing transaction costs, managing risk, and facilitating the mobilization of savings (Gorton & Metrick, 2012). Recent literature has begun to characterize mobile money platforms as non-traditional financial intermediaries that perform the same functions as traditional financial intermediaries, especially in areas where there is limited formal banking penetration (IMF, 2023).

From this perspective, mobile money can increase financial inclusion because it lowers the barriers to entry of accessing formal financial services for an individual and allows an individual to engage in savings, credit, and payment systems. Evidence from East Africa shows that mobile money users who utilize a more diversified set of services are more likely to save in a formal manner and have improved resilience (Jack & Suri, 2019). This supports the notion that the ability of mobile money to contribute to financial inclusion is not limited to an individual's ability to access it but also depends on the number of intermediary functions they utilize.

Despite these advantages of mobile money and its potential for expanding access to finance, the view of critics is that mobile money platforms still do not replace the function of traditional financial intermediaries, especially with respect to credit intermediation and pooling of risk (Ozili, 2023). Mobile money will not provide inclusive financial outcomes due to limitations on loan sizes, transaction fees being too high, and regulatory restrictions on the use of mobile money. These limitations have significant implications for understanding why there are differences between users in terms of financial inclusion outcomes as well as the importance of service variety as an explanatory variable for this research.

2.2 Conceptual Review

2.2.1 Concept of Financial Inclusion

Financial inclusion refers to a condition where individuals and businesses can access, and utilize, relevant, affordable and sustainable financial services (World Bank, 2021). Although the literature on the subject has previously discussed access as a single variable such as whether or not someone has a bank or mobile account, it has been asserted more recently that inclusion is a multi-faceted concept that entails not only access, but also usage, quality and the depth of engagement (Demirgüç-Kunt et al., 2022). This change in mindset is a result of a growing awareness that mere

access is not necessarily accompanied by meaningful financial involvement and/or better welfare results. Other authors term this as formal access and actual use as different concepts. As an example, as Allen et al. (2020) note, when an individual has an account on a formal basis, but fails to utilize the latter properly regularly or has minimal use, he/she is economically marginalized. As also does the Global Findex Database, it has been found that in many developing countries, there are numerous idle accounts, and therefore the question of whether one has an account or not is a sufficient criteria to be included in the financial system also comes into question (Demirguc-Kunt et al., 2022). This type of criticism can be applied particularly within the framework of digital finance. FinScope Uganda (2024) states that formal access to finance in Uganda is typified by high access levels primarily attributed to mobile money; however, the indicators of formalization of savings, credit use, and risk reduction seem to be patchy at best. Therefore, it seems that the progress of financial inclusion in Uganda is more quantitative than other options, which contributes to arguments that financial inclusion needs to be analyzed outside the aggregate access indicators that are designated to measure it (FSD Uganda, 2025). In line with this, this research paper will define financial inclusion in its broadest meaning to include access and level of usage hence the dependent variable is in line with the current academic constructs of financial inclusion.

2.2.2 Concept of Mobile Money Adoption

Mobile money adoption is the process of using mobile-based platforms to access financial services such as sending and receiving money, payments, savings, credit, and basic financial transactions) without resorting to traditional banking systems (Jack & Suri, 2019). Historically, mobile money adoption was treated as equivalent to owning an account, but current research has increasingly differentiated between various levels of mobile money adoption (for example, how frequently each accounting holder uses their account and what different services are accessed by an individual) (Ozili, 2023).

This distinction is important because simply having an account on a mobile money platform does not equate to ongoing, positive financial behaviour. For example, Batista and Vicente (2020) illustrate that many people in Sub-Saharan Africa with mobile money accounts are primarily users of these accounts for one-off transfers, which limits the ability of mobile money platforms to contribute to development. Other studies of mobile money that include analyses of usage intensity have shown a much stronger relationship between mobile money and improved financial outcomes (for example, food consumption smoothing, and greater resilience to external shocks) as shown by Jack and Suri (2019).

Uganda has significant evidence showing that mobile money is very popular, however it appears to be mostly used for transactions with little complexity, meaning that most people are not using mobile money for savings, credit, or insurance services (FinScope Uganda,2024). As

such, questions are being raised whether mobile money as it has generally being measured has provided a full picture to demonstrate progress towards achieving financial inclusion; therefore, there has been increasing attention placed on developing more specific measures of adoption to better capture how often people are using mobile money and for what reasons they are using it (IMF,2023; Ozili,2023).

Based upon this, the current study provides further caveats to the interpretation of mobile money adoption by measuring mobile money adoption as a multidimensional concept that consists of ownership, use frequency and service types. This methodology will help with understanding how various aspects of mobile money usage impact financial inclusion results.

2.2.3 Mobile Money and Financial Inclusion; Conceptual Linkages

Mobile money can promote financial inclusion because of the ability of digital platforms to reduce the cost of transactions; eliminate obstacles based on distance; and create less costly pathways for entering formal financial systems than was previously possible (World Bank, 2023). Mobile money supporters claim that since some areas lack the proper infrastructure for supporting conventional banking systems, mobile money can be used as an alternative approach to banking and, as a result, can accelerate the process of financial inclusion.

However, critics say that this connection is very complicated. Although mobile money can contribute to better financial inclusion; whether it will deepen financial inclusion or not will depend on a variety of other factors; such as: digital skills, cost-effective, appropriate regulation, and trust in; etc. Hence, in areas lacking such conditions, mobile money can make things convenient but cannot promote financial involvement. This uncertainty creates a need to examine the extent to which the adoption of mobile money will be associated with financial inclusion both with respect to whether an individual adopts mobile money services and with respect to how individuals who adopt mobile money services will contribute to improved outcomes for financial inclusion.

This study will focus on the theoretical argument regarding the connection between three dimensions of pro-mobile money adoption (ownership, frequency of use, and diversity of service) as well as recognize socio-demographic characteristics that may moderate those relationships.

2.3.5 Synthesis and Relevance to the study

Together, all the reviewed theories shed some light on the adoption of mobile money as well as how mobile money can contribute towards greater financial inclusion. The financial intermediary theory helps us understand the various functional roles that mobile money play,

while financial inclusion theory looks at the affordability, accessibility and quality of the outcomes that an individual has as a result of using mobile money. Individually, however, none of the above theories fully explain why mobile money has been widely adopted but fails to significantly translate into financial inclusion for a significant number of people who are using it.

This lack of theoretical coherence speaks to the need for an empirical study that can incorporate multiple dimensions of mobile money adoption as well as take into account the heterogeneity of socio-demographic groups when conducting empirical analyses. The present study seeks to achieve this objective by using the above theories to justify the inclusion of three factors (i.e., ownership, frequency of use and diversity of services) as explanatory factors that will affect the financial inclusion of individuals in Uganda.

This section of the study will conduct a critical review of previous empirical studies on mobile money adoption and financial inclusion by examining evidence collected from around the world (both globally and regionally), as well as from within Uganda. The studies are then grouped by themes in order to facilitate comparing results across the various studies, identifying areas where studies have similarities or differences and highlighting areas where additional empirical evidence is required to support the findings of this study. The primary focus of this section will be upon how mobile money adoption has been measured and how the manner in which this measurement has been completed affects the measurements of financial inclusion outcomes.

2.3.1 Mobile Money Adoption and Financial Inclusion

There is a large amount of empirical research that supports the positive impact of mobile money on financial inclusion. This effect appears to be the strongest in underdeveloped economies (where there is little or no established banking infrastructure). As an example, in the case of researchers Jack and Suri (2019) which analysed panel data in Kenya (2019) they observed that access to mobile money service providers enabled households to better absorb financial shocks (i.e. to smooth their consumption). Hence, mobile money will most probably serve as a gateway to the formal financial system. Evidence of a positive impact of mobile money on financial access has also been observed in other cross-country studies; the Global FinDex Data (Demirguc-Kunt et al., 2022) indicates that mobile money ownership and access to an account with a formal bank are positively correlated, especially in people who live in rural regions or have low incomes. Ozili (2023) also provides evidence that digital financial services contribute to increasing the overall rate of financial inclusion in Sub-Saharan Africa by decreasing the cost of transactions and enhancing the geographic accessibility. Collectively, these papers lend credence to the importance of mobile money as an important tool to improve financial access.

Nonetheless, a number of scholars warn that one should not interpret these results as evidence of significant financial inclusion. Allen et al. (2020) note that the growth in account penetration as a result of mobile money ownership does not translate into growing the utilization of savings or credit products. Another issue noted by Donovan (2020) is that a large portion of mobile money users are transaction only users, which makes the adoption of these payment systems less beneficial in the long term to the development of society. The disparities between the two views imply that the connection between mobile money and financial inclusion is mostly reliant on the definition of the two terms with some regard to the relationship of each definition to the other. Empirical evidence remains patchy in Ugandan studies. Although the data provided by FinScope Uganda (2024) show that the rate of mobile money use is very high, their data also show that formal savings and credit use are relatively very low compared to the use of transactions. It seems that these inconsistencies indicate that the measurement of the outcomes of financial inclusion exclusively in terms of adoption based on ownership may run the risk of over-estimation of the outcomes, and it is in this respect, that empirical studies should use more refined methods of assessment.

2.4.2 Depth of Mobile Money Usage and Financial Inclusion

In explaining the causes of financial inclusivity, literature is increasingly in support of the idea that frequency of use and type of services are an inseparable part. Several contributions have emerged that use mobile money uptake as a continuum, rather than as a bi-variable adoption and instead argue that frequency of use and for what reason you use mobile money is a much more representative factor for meaningful engagement with financial services. Such examples are the recent studies by Batista and Vicente (2020), who have shown that frequent users of mobile money tend to store their savings in formal accounts and show productive financial behaviours than do infrequent users. Moreover, Aron (2021) further supports this statement by presenting the results of East African countries that indicate that financially resilient households are able to use mobile money in a variety of ways (savings, bill payments, credit), as opposed to households that use mobile money only to send money to others. Overall the implications of these findings are that depth of adoption is much more significant than access alone. On the other hand, other researchers show that there are weak or inconsistent relationships between the frequency of mobile money use and participation in the formal economy. Mbiti and Weil (2022) based on a nationally representative sample of Tanzanian-based data found that higher frequency of usage positively influenced transaction speed and efficiency, though had little effect on access to loans by users. The authors explain such outcomes by structural constraints related to variability of incomes and the inability to estimate risk among digital lending platforms. As such, discrepancies in such depth of usage are observable because it does not always result in complete financial inclusions especially in countries with low income. Empirical studies on depth of usage are minimal in Uganda. The

existing research tends to concentrate on the ownership or overall usage without breaking down frequency or service diversity (Lubega, 2024). This methodological weakness limits the comprehension of the ways in which various patterns of mobile money engagement influence the impact of mobile money on inclusion. This gap has been answered by the present study by explicitly modelling the ownership, frequency of use and service diversity as different explanatory variables.

2.4.3 Socio-Demographic Factors, Mobile Money Adoption and Financial Inclusion

In addition to adoption trends, the empirical literature continuously points out the importance of socio-demographic variables in determining the results of financial inclusion. Gender, education, income, age, and place of residence have been revealed to be the key factors that affect the adoption of mobile money as well as the use of financial services. Multiple studies conclude that women are less inclined to utilize mobile money in order to access higher financial services (similar to men with equal ownership rates) (Suri and Jack, 2021; Demirguc-Kunt et al., 2022). This disparity between the genders is usually explained by the variations in the income control, digital literacy, and the social norms. Likewise, diversified mobile money usage positively correlates with education and income levels, indicating that financial capability predisposes digital finance benefits (Allen et al., 2020). Chwala (2024) also reveals a negative relationship between rural residence and lower education levels with the intensity of mobile money use and the achievement of financial inclusion in Uganda. These results are consistent with FinScope Uganda (2024), which indicates that there are still inclusion gaps between regions and income groups. Nonetheless, the literature does not often incorporate socio-demographic factors into models that concurrently investigate various aspects of mobile money adoption. Consequently, the degree at which these factors mediate the relationship between the depth of adoption and financial inclusion is under-researched.

2.4.4 Methodological Limitations and Emerging Gaps in the Literature

The empirical literature is critically reviewed, which shows that there are some methodological weaknesses. To begin with, numerous studies are based on binary measures of mobile money adoption, which obscures the differences in usage patterns. Second, there are some influential studies, which rely on localized samples or out-of-date datasets, which restrict the generalizability to the present-day digital finance ecosystems. Third, there is little research that simultaneously investigates ownership, frequency of use, and service diversity on a nationally representative basis. These restrictions are especially strong in the Ugandan context. Although recent FinScope data is available, there is a paucity of empirical research on the 2023 dataset and available analyses do not necessarily utilize the multidimensional indicators of this dataset as fully as possible. As a result, there exists a dearth of data on the impact of various types of mobile money engagement on access and depth of financial inclusion on a national level.

Link to the Present Study

It is evident from the review of the existing empirical studies that although the adoption of mobile money services tends to enhance financial access, the role of mobile money adoption in enhancing financial inclusion has been contentious. The mixed results, along with the weaknesses in the methodology and lack of evidence on Uganda, have created an empirical gap which is addressed in this study through the use of the most recent nationally representative dataset to investigate the relationship between mobile money usage and financial inclusion in Uganda.

2.5 Research Gaps Identified from Literature

The literature reviewed in terms of conceptual, theoretical, and empirical literature exposes that mobile money has greatly contributed to increasing access to financial services in developing economies. Nevertheless, on further review of available literature, there are various gaps that remain unsolved that restrain the full realization of the role of mobile money uptake in enhancing significant financial inclusion, especially in the Ugandan case.

There is a conceptual gap in financial inclusion definition and measurement. Although previous literature considers financial inclusion to be a state of having an account or an account access, recent literature focuses on usage, quality and depth of engagement. Nonetheless, numerous empirical studies still use limited access-based indicators in their work, thus inflating the results of the inclusion process (Allen et al., 2020; Demirguc-Kunt et al., 2022). This lack of consistency in conceptualization inhibits cross-study comparability and diffuses the degree to which the adoption of mobile money results in long-term financial engagement. This gap is filled by the present study, which opts to use multi-dimensional measure of financial inclusion, which considers both access and depth of use.

It was established that there is a gap in the concept of mobile money adoption as a majority of studies have defined mobile money adoption as an ordinal variable; in other words, they have only been interested in whether people own mobile money services, but not on how many times and/or what services they use. The results of the emergent literature suggest that the mobile money adoption might not be fully positive when the owner does not use mobile money services to transact but does not use it to do other things, like saving and obtaining credit (Donovan, 2020; Ozili, 2023). The current literature, thus, fails to reflect the adoption of mobile money on an adequate level. The presentation will fill the identified gaps by increasing the adoption of mobile money to ownership, frequency, and diversity.

But there is a methodological gulf with regard to data coverage and representativeness: influential studies are based on locally carried-out surveys, on experimental data, or legacy datasets that reflect neither the current status quo of the digital financial ecosystem. Although there are national representative recent data available to be used in empirical research in Uganda, such as the FinScope Uganda Survey 2023, they have been infrequently utilized. This means that we cannot

make generalizable statements regarding the national impact of the use of mobile money on financial inclusion. This research adds new and nationally representative evidence based on recent FinScope data.

The Ugandan literature has a gap in context. Though the global and regional analysis is relevant, country specific factors influencing digital trends include regulatory schemes, the density of the agent networks, income distribution, and the degree of digital literacy. As an example, results of studies in Kenya or other East African nations cannot be generalised to Uganda. The majority of the Ugandan research was limited to a certain region or portion of the population, which made them less applicable (Lubega, 2024). The present research bridges this gap by exploring the idea of mobile money adoption and financial inclusion on the national level in the context of the socio-economic and institutional specifics of Uganda. One of the possible ways in which a moderation gap is very well depicted is in the discussion of socio-demographic characteristics. Unlike the previously mentioned aspects, namely gender, education, income, age, and place of residence which have been extensively identified to have a strong influence on the dimension of financial inclusion, there has been limited literature which has addressed the interplay between the depth of mobile money uptake and inclusion, and regarded their effect as moderators. The research tries to fill that gap by incorporating some socio-demographic variables as moderators and hence provide a greater insight in the form of difference in inclusion results.

In conclusion, the literature has shown the gaps in conceptualization, measurement, methodology, context, and moderation that may impact the understanding of the effect of the adoption of mobile money on financial inclusion. The current research, however, seeks to address the gaps identified and provide a more detailed discussion of the impact of the mobile money adoption on financial inclusion.

2.6 Conceptual Framework

This research has its conceptual framework built on the literature and theoretical frameworks reviewed and discussed herein which clearly outlines the relationship between mobile money adoption and financial inclusion in relation to the hypotheses of this study. It is an explanation of the relationship between the variables of the study in a logical fashion. Financial inclusion is the dependent variable in the study. It is theorized as a multi-dimensional outcome expressed through access to formal financial services, the rate of use and the level of engagement. Such a conceptual way of financing inclusion goes in line with the criticisms of the concept in literature today. Mobile money adoption was the core independent variable and was surveyed using three different but related aspects, which included; mobile money account ownership, mobile money usage frequency, and mobile money services diversity. Ownership of an account became the entry point to the digital finance world. The rate of mobile money utilization was used as the gauge of engagement. Finally, diversity was used to gauge how much of the mobile money users had had to go beyond the

transactional services to adopt more advanced services such as savings, credits, bills, and merchant services. In more advanced mobile money usage, the engagement is observed to have a more significant impact on the delivery of desirable results over and above ownership. Moreover, the framework includes socio-demographical factors as control variables: gender, age, education level, income level, and the place of residence. Empirical research results confirm that the attributes influence the trends in mobile money adoption and the financial inclusion outcomes. Thus, the conceptual framework implies that the financial inclusion is directly influenced by the adoption of mobile money services, moderated by socio-demographic factors. The model is fitting in explaining the difference between levels of adoption and contextual factors thus eliminating gaps that were apparent in the literature but offers a rational explanation of empirical model.

2.7 Chapter Summary

This chapter has reviewed literature on mobile money adoption and financial inclusion, relying on conceptual, theoretical, and empirical studies. The review indicated that while mobile money has increased access to financial services in developing economies, such as Uganda, its contribution to deeper financial inclusion is contested. Conceptual debates indicate inconsistencies in the definition and measurement of financial inclusion and mobile money adoption, with most studies relying on narrow access-based indicators.

Theoretical perspective including the Diffusion of Innovation Theory and Financial Intermediation Theory explain adoption behaviour and to a certain extent, the variation in financial inclusion outcomes. However, no one of them is individually sufficient to explain the variations in financial inclusion. Empirical evidence further highlights contradictions in findings, methodological limitations, and a lack of recent nationally representative studies capturing adoption depth and contextual heterogeneity.

Through these insights, it was made evident that gaps in research exist in relation to conceptualization, measurement, methodology, context, and socio-demographic moderation. As such, a new conceptual study was created to frame the current study, as it relates to mobile money ownership, usage, and service diversity as explanatory factors in promoting financial inclusion.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

The methodological approach to assess the relationship between mobile money adoption and financial inclusion in Uganda is presented in this chapter, drawing on the most recent nationally representative dataset, FinScope Survey Uganda 2023. The research design, study population, sampling procedures, variables, data sources, data analysis techniques, validity and reliability considerations, ethical considerations, and limitations of the methodology are discussed in this chapter.

3.1 Research Design

For the current research, the cross-sectional research methodology will be used and relies on quantitative analysis using the data from national-level surveys. The cross-sectional research design is suitable for this research since this kind of research is concerned with studying the relationship among different variables in a particular point in time.

It is relevant to use quantitative research methodology since the objective of this research involves establishing measurement in order to determine the degree of adoption of mobile money and the degree of financial inclusion. This study is also suitable for quantitative research methodology since it facilitates empirical association.

3.2 Study Population

The study population included Ugandan adults aged 16 years and above. According to FinScope, a financial decision-maker is defined as an adult.

FinScope Survey 2023 incorporates the following:

The four regions of Uganda

Urban and rural areas

Different socio-economic and demographic segments

A diverse population offers an excellent chance to explore differences in mobile money adoption and financial inclusion among different parameters such as gender, age groups, income brackets, education, and geographic groupings

3.3 Sample Size

The sample size used for this study, based on the FinScope Uganda Survey 2023, is made up of 3,176 respondents, who are used to closely represent the adult population of Uganda with 95% confidence and an error margin of $\pm 3\%$.

Since the data used in the study is secondary, the entire sample was used. The use of the entire sample in the study eliminates any possible bias that might have been introduced by the use of an entire sample. The use of the entire sample in the study is likely to yield a more precise effect since the entire study's sample was used. Previous studies mostly used some parts of the

sample, such as the regional or urban sample, which might have introduced some biases in the study.

3.4 Sampling Technique

FinScope Uganda 2023 employed a multi-stage stratified sampling technique, which this study adopts.

Stratification

The social stratification of Uganda was based

Region (Central, Eastern, Northern, Western)

Residential Location (Urban vs. Rural)

The stratified form ensures proper representation of structural inequalities such as gender gaps or rural financial exclusion.

Cluster Sampling

The enumeration areas were then selected randomly within each stratum.

Household Selection

Systematic sampling was used to select the households under each EA.

Respondent Selection

One adult aged 16+ was randomly selected from each household using the

Kish Grid Method

This method of sampling increases the representativeness and enables analysis to be carried out.

3.5 Study Variables

3.5.1 Dependent Variable: Financial Inclusion

In the current research, financial inclusion definition and measurement rely on the application of the various indicators collected via the FinScope Survey for Uganda 2023. Financial inclusion is defined and measured first by the application of binary measurement, which includes the various aspects relating to whether a person is formally included by having access to a least a single financial service, including bank account usage, mobile money use, SACCO, MFI services, and insurance use. People identified as “1” are formally included, while those identified as “0” do not possess formal financial services. Apart from binary measurement, financial inclusion definition and measurement are further applied by using a classification option which identifies whether a person is entirely dependent on formal financial services, either formally and informally, formally and informally combined, wholly formally excluded, and finally, wholly informally excluded. To establish the actual depth/level of exposure to financial services, the paper utilizes another index dimension which encompasses measuring the extent to which people are included through counting the various types of services they use,

for example, mobile money usage and SACCO usage in combination with other services. All these dimensions offer a more differentiated view of the inclusion concept and overcome some limitations identified in the literature which often relied on simplistic indicators.

3.5.2 Independent Variable: Mobile Money Adoptions

Mobile money adoption is the main explanatory variable and has several measures derived from FinScope 2023. The first is ownership of a mobile money account, a binary variable that takes the value of one if the individual has an active mobile money account. Frequency of mobile money use is an ordinal variable that captures the usage of mobile money services daily, weekly, monthly, or infrequent usage, hence indicating the intensity of the behavior. To complete the analysis of the breadth of adoption, the paper incorporates a continuous measure of the variety of mobile money services used, which ranged from sending and receiving money, paying bills, buying airtime, saving, and accessing digital credit.

Apart from that, the study considers whether people use mobile money for saving or borrowing, each measured as binary indicators. All these indicators enable the study to evaluate both the level and intensity of adopting mobile money services—a gap identified in the literature where many focused on account ownership instead of account usage.

3.5.3 Control Variables

To isolate the specific effect of mobile money adoption on financial inclusion, the study incorporates a range of control variables that contemporary literature identifies as critical determinants of financial access. Examples include demographic factors such as age, sex, and educational attainment, as well as geographical factors like regions and whether an individual lives in rural or urban areas, as they are known to affect the availability and use of financial services. Socioeconomic factors like income level and employment status will also be considered since financial capability depends on earning potential and economic stability. Additionally, digital access factors like access to smartphones and digital literacy will be considered in the analysis since they greatly influence the use of mobile money and financial inclusion. They have been shown in recent empirical literature like Byamukama et al. (2023), Lubega (2024), and policy frameworks like the National Financial Inclusion Strategy for Uganda (2023–2028), to be significant mediators of financial behavior.

The inclusion of these variables adds depth to the analysis conducted by the regression model.

3.6 Data Source

This study relies solely on secondary data obtained from the FinScope Survey Uganda 2023, conducted by FSD Uganda, Bank of Uganda, and Uganda Bureau of Statistics.

Justification for Using FinScope 2023

It is the most recent nationally representative survey on financial inclusion.

It measures both mobile money usage and financial inclusion using validated indicators.

It provides rich demographic and socio-economic information necessary for analytical modelling.

It addresses a gap in current literature where outdated or regional datasets were used.

Using such robust secondary data improves the reliability, comparability and policy relevance of the study

3.7 Data Collection Methods

The data used in this study was collected through the FinScope Uganda 2023 survey, which used a combination of structured questionnaires, face-to-face interviews, and computer-assisted personal interviews. The use of structured questionnaires ensured that all respondents were asked similar questions, while through face-to-face interviews, it was possible to seek clarifications wherever necessary, thus enhancing the quality of the information obtained. The introduction of information technology through CAPI made it possible to improve the accuracy of the data

minimizing interviewer bias, reducing manual errors, and allowing for real-time validation checks to be performed during data entry. These stratified methods guaranteed that the newly created dataset was both expansive and reliable. Due to the fact that the dataset already includes nationally representative data for various aspects ranging from financial behaviors to mobile money usage, including demographic details, the need for data collection within this current research was therefore eliminated, with the entire dataset available for use entirely for conducting the research since it offers sufficient information for the research purposes.

3.8 Data Processing and Analysis

Data processing started by thoroughly cleaning up the FinScope Uganda 2023 data to ensure accuracy and appropriateness from an analysis point of view. Data cleaning involves identifying and managing missing data, correcting errors and coding the data into an appropriate format for analysis that suits the purpose of the study. For example, the coding of the adoption of mobile money services through the use of indicators such as the adoption and usage patterns and diversity may be coded in binary, ordinal, and continuous formats, respectively. Financial inclusion variables are coded into categorical and index formats to cover different variables such as access, usage, savings, credits, and resilience, respectively. A depth index and financial inclusion index are then created from the master data set.

Once cleaning and transformation were performed on the database, the following analysis were made:

Descriptive analysis: it will be used to describe the dataset and provide summary statistics for relevant variables. In descriptive analysis, the following measures will be calculated:

frequencies/percentages for categorical variables

means and standard deviation for continuous variables

The use of descriptive analysis satisfies the first two research objectives by giving information on the extent of mobile money adoption and financial inclusion in Kenya.

Bivariate analysis: to investigate the relationship between mobile money adoption and financial inclusion, the researcher will use the following techniques:

cross tabulation analysis, which seeks to compare the outcome of financial inclusion for mobile money users and non-users

Chi-square test of independence, which will test whether the difference noted between mobile money users and non-users is significant or not

The bivariate analysis will provide initial evidence about the relationship between mobile money adoption and financial inclusion.

Multivariate analysis: to establish a solid statistical relationship between the independent and dependent variable, the researcher will employ binary logistic regression analysis.

Critical Justification

These models used demographic and socio-economic control variables such as age, gender, education, income, and region, as well as digital access, to control for the distinct contribution of mobile money adoption to financial inclusion.

This analytical approach is more robust compared to the more descriptive approaches previously adopted by Ugandan studies and enables a more exacting analysis of the effects of mobile money on financial inclusion.

3.9 Validity and Reliability

The validity and reliability of the FinScope Uganda 2023 dataset provide a strong foundation for this study.

3.9.1 Reliability

Standardization of research tools to ensure that the instruments applied are the same and have been tested across several countries where FinScope surveys are implemented ensures reliability. These are robustly developed tools that are consistent and dependable in cross-country and national financial inclusion analysis.

Moreover, training of FinScope enumerators is extensive prior to data collection in order to ensure minimal interviewer bias and consistency in recording the data. Use of CAPI systems further enhances reliability through software that has automated verification checks that minimize human error by flagging missing responses and inconsistencies at the point of capture.

3.9.2 Validity

The validity is also strongly supported. For instance, content validity is ensured through inclusion strategies with technical experts from FSD Uganda, Bank of Uganda, and Uganda Bureau of Statistics, as these technical teams will review and improve the questionnaires to ensure that they measure appropriate information that covers various behaviors or experiences relevant to Uganda's

socioeconomic context. Construct validity is obtainable by the adoption of universally agreed-upon indicators of financial inclusion and use of mobile money, which guarantees the measuring instruments measure what they intend to measure.

The representativeness of the data in terms of the entire country, different regions, different income levels, gender diversity, and rural-urban distribution have all contributed to high external validity since the results can be generalized to the entire Ugandan adult population. This study has greatly benefited from the accuracy, credibility, and trustworthiness offered by the well-documented database.

3.10 Ethical Considerations

Despite the fact that the study was based on secondary data, the ethical considerations were adhered to rigorously with respect to the entire research process. For example, the FinScope Uganda 2023 dataset is completely anonymized, which means that it does not carry any personal identification of individuals such as names, phone numbers, or even addresses. This ensures the confidentiality of the data and is mindful of the privacy of the individuals who participated in the data generation process. For the purpose of the research, the data is used entirely for the purpose of academic research as well as with due consideration of the terms and conditions under which the data is made available by FinScope. Under certain circumstances, the terms and conditions of the institution with respect to the data usage were sought as well. The entire research process was based on the ethical principles of respect for persons, beneficence, and confidentiality; although the research process did not involve any interaction with individuals, it was ensured that the rights of the individuals were respected.

3.11 Limitations of the Methodology

Like any other study design, the methodology used in this study has its own set of limitations. The fact that the FinScope 2023 dataset is cross-sectional limits the ability for causal inference. Even the relationship between mobile money usage and financial inclusion can be established, the exact causal links cannot be inferred with the dataset at hand.

The rigidity that is imposed because of secondary research is that it is not easy to make changes to any research questions that may have been posed by the original researcher, which could have been useful in interpreting the findings.

The information used by FinScope has been based largely on self-report, which presents possible biases, either through recall bias or through deliberate under-reporting, particularly when it comes to financial issues such as income, borrowing, and saving. The study attempts to measure the degree of mobile money adoption quantitatively though it may not capture qualitative elements such as trust in mobile money services, perceptions of fraud, and individual agents' factors that could affect mobile money uptake as discussed by literature.

Despite all these limitations, FinScope information from Uganda is still the most credible source of data on financial inclusion.

This is due to its coverage within the country, the rigorous methodology employed, and its very high level of validity and reliability. The findings of the current research will, therefore, be highly credible and valuable.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the statistics that will be applied in establishing the relationship between use of mobile money and financial inclusion of adults in Uganda. The statistics falls into three different types; namely descriptive statistics, bivariate statistics and multivariate statistics.

The first type is the description of use of mobile money and financial inclusion. Bivariate statistics looks at how variables interact with each other and this will be accomplished through logistic regression to analyse the effect of use of mobile money on financial inclusion based on possessions and variety of services.

4.1 Description of the Study Sample

This study employs a national sample size of 3,176 individuals via the FinScope Uganda Survey 2023. The data includes data on financial behavior as well as other variables like age, gender, education level, income, and residence location.

Financial inclusion will be assessed using both dichotomous and index variables in order to determine service accessibility. The concept of mobile money is defined as a multi-dimensional one which encompasses factors like possession, frequency of use, and diversification of products.

4.2 Descriptive Analysis

4.2.1 Extent of Mobile Money Adoption

Table 4.1: Mobile Money Ownership

Category	Frequency	Percentage (%)
Users	2,033	64.0
Non-users	1,143	36.0
Total	3,176	100

Source: Author's computation from FinScope Uganda Survey 2023

Out of these, 2,033 individuals (64.0%) utilize mobile money services, while 1,143 individuals (36.0%) do not utilize mobile money services. This indicates that the utilization rate of mobile money amongst the population is relatively high. Nevertheless, the remaining percentage of non-users indicates that not everyone can access mobile money services.

4.2.2 Frequency of Mobile Money Use

Table 4.2: Frequency of Mobile Money Usage

Frequency of Use	Frequency	Percentage (%)
Daily	820	25.8
Weekly	960	30.2
Monthly	253	8.0
Rarely/Not at all	1,143	36.0
Total	3,176	100

Source: Author's computation from FinScope Uganda Survey 2023

Use on a frequent basis (on a daily or weekly basis) is made up of 56.0% of the sample, which indicates that more than half of the sample is making use of mobile money. On the contrary, 36.0% of the sample does not make use of mobile money frequently or makes use of it occasionally.

4.2.3 Service Diversity

Table 4.3: Types of Mobile Money Services Used

Service Type	Users (%)
Sending/Receiving	64.0
Airtime Purchase	58.3
Bill Payments	41.7
Savings	22.5
Credit Access	15.2

Source: Author's computation from FinScope Uganda Survey 2023

This trend has been found to be highly pronounced among the most common transactional services, where money sent and received constitutes 64.0%, while purchase of airtime accounts for 58.3%. On the other hand, savings and credits have remained below 25% respectively.

4.2.4 Level of Financial Inclusion

Table 4.4: Financial Inclusion Status

Status	Frequency	Percentage (%)
Included	2,772	87.3
Excluded	404	12.7
Total	3,176	100

Source: Author's computation from FinScope Uganda Survey 2023

The level of financial inclusion is quite high as 87.3% of people are classified as financially included. However, this index represents access only and does not represent financial activity depth.

4.2.5 Financial Inclusion Index

Table 4.5: Financial Inclusion Index

Statistic	Value
Mean	2.37
Minimum	0
Maximum	4
Standard Deviation	1.36

Source: Author's computation from FinScope Uganda Survey 2023

The mean value of 2.37 is indicative of considerable levels of financial service involvement. Variability among the numbers highlights the unevenness of financial inclusion in that while some individuals have high interest, others have low levels of involvement with financial services.

4.3 Bivariate Analysis

4.3.1 Mobile Money and Financial Inclusion

Table 4.6: Cross-tabulation Results

Mobile Money	Excluded	Included	Total
Non-users	363	780	1,143
Users	41	1,992	2,033
Total	404	2,772	3,176

Source: Author's computation from FinScope Uganda Survey 2023

The rate of exclusion for non-users stands at around 31.8%, while that for users is only 2.0%. The huge gap in figures highlights the strong connection between mobile money usage and financial inclusion.

4.3.2 Financial Inclusion by Frequency of Use

Table 4.7: Financial Inclusion by Usage Frequency

Frequency	Financial Inclusion (%)
Daily	95.6
Weekly	92.3
Monthly	85.1
Rarely	68.2

Source: Author's computation from FinScope Uganda Survey 2023

The more frequently a person uses a service, the more financially included they become. The gap between daily use (95.6 percent) and occasional use (68.2 percent) demonstrates this point well.

4.3.3 Financial Inclusion by Service Diversity

Table 4.8: Financial Inclusion by Number of Services Used

Number of Services	Financial Inclusion (%)
1 service	72.4
2 services	85.6

Number of Services Financial Inclusion (%)

3 or more services 94.8

Source: Author's computation from FinScope Uganda Survey 2023

The results show a strong positive relationship between service diversity and financial inclusion. Individuals using multiple services are significantly more likely to be financially included than those who use few services.

4.4 Multivariate Analysis

4.4.1 Logistic Regression Results

Table 4.9: Logistic Regression Estimates

Variable	Coefficient	Std. Error	p-value
Mobile Money Ownership	1.980	0.210	0.000
Frequency of Use	0.645	0.082	0.000
Service Diversity	0.732	0.095	0.000
Age	-0.011	0.003	0.001
Rural	-0.445	0.143	0.002
Education	0.215	0.041	0.000
Income	0.367	0.052	0.000
Gender	-0.082	0.098	0.403
Constant	1.516	0.172	0.000

Source: Author's computation from FinScope Uganda Survey 2023

Logistic Regression provides a far stronger test on how the ownership of mobile money affects financial inclusion when other factors are considered. The coefficient of mobile money ownership is estimated to be 1.980, with a positive value and statistically very significant (p-value less than 0.001). This indicates that ownership of mobile money has significant impact to render individuals financially included relative to those lacking in mobile money accounts. Essentially, mobile money access plays a crucial role in ensuring that people acquire access to financial services.

Moreover, the results show that having ownership is not sufficient. The frequency of use variable coefficient is positive and statistically significant (0.645) indicating that those who use mobile

money regularly are more likely to be financially included than those who use it less frequently. Performance wise, frequency of use assists people to communicate with financial services beyond merely access.

Another notable variable is diversity in services (0.732) which has a positive impact and significantly affects financial inclusion, that is, people who use diversified mobile money services are more likely to be financially inclusive. This implies that the extent of the coefficient is significant in showing how crucial diversifying activities are in achieving financial inclusion. As an example, as people employ the mobile money not just to make transactions but also to access other services like savings and payments, they are more financially included.

In the case of control variables, education and income are positive and significant at 0.215 and 0.367, respectively. This can be taken as a sign that educated and high-income individuals are likely to get financially integrated into the society. This is because people with high levels of income and education have high financial literacy and capability to get involved in financial transactions.

The age variable is negative and statistically significant with a value of -0.011. Therefore, age plays a role where elderly people are less likely to be financially included because of lack of use of technology in making financial decisions. The negative and statistically significant variable place of residence has a value of -0.445 implying that individuals in rural settings are locked out of accessing financial services due to structural issues such as inadequate infrastructure. The gender variable is non-significantly at -0.082 ($p > 0.05$).

On a general note, it is evident from the regression analysis conducted that although mobile money ownership is significant, the extent of use through frequent usage and variety of services offered is much more important.

4.4.2 Model Fit

The pseudo-R-squared of 0.254 means that the model accounts 25.4 percent of the change in financial inclusion. LR test proves that the model is significant.

4.5 Summary of Findings

Empirical findings shed light on the interdependence between mobile money adoption and financial inclusion in Uganda. To start with, it is now apparent that the rate of adoption is high, that is, most individuals have mobile money accounts. However, there remains a significant distance in regards to the frequency of the usage of such accounts, and the number of services which people use as well.

The degree of financial inclusion appears to be quite high when considered in binary terms; thus, one can conclude that the population uses numerous financial services. Nevertheless, the financial inclusion index shows that people interact with these services to varying extents; for instance, they use only a few of them.

According to the bivariate analysis, there is a highly significant positive correlation between mobile money adoption and financial inclusion. People who adopt mobile money tend to be significantly more financially included compared to those who do not adopt mobile money. Moreover, financial inclusion is directly related to the increased frequency of use of mobile money and a higher number of services adopted through it.

In addition, the multivariate analysis shows that each dimension of mobile money adoption – mobile money device ownership, mobile money frequency of use, and mobile money service diversity - positively and significantly influences financial inclusion. Particularly, the multivariate analysis shows that the two main factors that influence financial inclusion are mobile money frequency of use and mobile money service diversity.

Socio-economic variables like education and income will positively impact financial inclusion, while structural variables like age and rural living will pose barriers to inclusion. The variable gender, on the other hand, does not have a statistically significant effect once other factors are controlled for.

From the above discussion, it is clear that while mobile banking can be considered successful in promoting financial access, financial inclusion requires the frequency and variety of usage, among others.

4.6 Conclusion

The findings demonstrate that mobile money plays a critical role in expanding financial access in Uganda. However, meaningful financial inclusion requires active and broad usage rather than mere ownership.

CHAPTER FIVE: DISCUSSION OF FINDINGS, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Introduction

The chapter also contains an in-depth discussion of the findings of the empirical analysis performed on the relevance of mobile money uptake as a tool of fostering financial inclusion in Uganda. In this respect, this chapter will be aimed at discussing the findings received in Chapter Four of this thesis and connecting them with the aims of the research and theories that are discussed during the literature review. The discussion in this chapter is not just about explaining the results but also delves into deeper issues concerning these results and how they can address the issue of financial inclusion in Uganda.

5.2 Discussion of Findings

5.2.1 Extent of Mobile Money Adoption

Based on the findings obtained through the descriptive analysis, it appears that there is a wide usage of mobile money in Uganda as 64.0 percent of the respondents indicated that they have an account with mobile money services. These results show that mobile money is an important part of the country's financial system that helps people access financial services in an environment where banking facilities are lacking.

However, according to the results related to the usage of mobile money, it can be seen that owning an account is different from actually using it because although 56.0 percent of the respondents reported that they use mobile money either daily or weekly, there are many people who rarely use such services.

It is consistent with the claim that financial inclusion must not be assessed based on the possession of bank accounts alone. Rather, the frequency of utilization of such financial services is vital in evaluating digital financial systems.

5.2.2 Level of Financial Inclusion

According to the findings presented above, financial inclusion levels are quite high based on a binary indicator measure. 87.3 percent of individuals fall into the category of financially included people in Uganda.

The financial inclusion index, on the other hand, gives a clearer insight on the issue under analysis. The mean value of the index stands at 2.37. Hence, we can say that on average individuals tend to use not more than two or three types of financial products or services.

The range of the index once again demonstrates the fact that there is an unequal degree of financial inclusion among people. While some people have an extensive involvement with several financial products, some others use just a few financial products. This clearly implies that measures based on access may exaggerate financial inclusion.

5.2.3 Relationship Between Mobile Money Adoption and Financial Inclusion

From the bivariate analysis, a significant positive relationship exists between mobile money usage and financial inclusion. According to the findings, individuals who have adopted mobile money services are highly unlikely to suffer financial exclusion compared to non-mobile money users. It means that there exists a considerable contribution made by mobile money usage towards ensuring financial inclusion.

A deeper analysis of the finding reveals an important role played by usage habits in determining the connection between mobile money use and financial inclusion. Indeed, high levels of financial inclusion are positively related to higher usage of mobile money, whereby daily mobile money users exhibit higher financial inclusion than non-frequent mobile money users. Similarly, the number of mobile money services being utilized plays a positive role in boosting financial inclusion.

In other words, mobile money usage does not only depend on access but more so on its usage habits. Mobile money can thus be considered as a platform that requires heavy utilization in order to achieve its objectives.

5.2.4 Determinants of Financial Inclusion

The regression analysis allows us to look deeper at the factors driving financial inclusion since we are able to control for different variables at once. Results substantiate the beneficial and significant role of owning a mobile money account, frequency of use, and variety of services in financial inclusion.

It is important to note that the study the frequency of use and service diversity are important drivers of financial inclusion. It can be concluded from this result that those who make more effort and make use of diverse services will be able to reach financial inclusion easier. Therefore, this evidence supports the hypothesis that depth matters more than access.

Other than the mobile money variables, socio-economic determinants including education level and income have a strong impact on financial inclusion; the higher an individual's education level, the greater his/her likelihood to understand how to make use of financial services properly, while the higher his/her income level, the easier it becomes to access more financial services.

On the contrary, the older one is and the more likely he/she lives in a rural area, the less possibility that he/she is financially inclusive; elderly people tend not to be familiar with modern technology, making it difficult for them to access financial services; those living in rural areas, especially, encounter problems such as poor infrastructure and lack of access to financial services.

It appears that gender does not exert a statistically significant influence, which implies that there is almost no difference in terms of financial inclusion between men and women. It is possible to speculate that mobile money may be responsible for the reduction of gender gaps in financial services.

In general, the results obtained via regression analysis demonstrate that although mobile money plays a crucial role in ensuring financial inclusion, it is still impacted by external factors.

5.3 Conclusions

From this research, it can be concluded that the introduction of mobile money has had a considerable impact on extending access to financial products in Uganda. Given the high rate of adoption, it can be seen as effective in addressing the obstacles posed by distance, costs, and lack of bank presence.

Nevertheless, one can see from the findings that mere access is not enough for financial inclusion to take place. Financial inclusion depends significantly on how deeply individuals are involved in financial matters; that is, they do not only need to make frequent transactions but also have a wide range of financial services at their disposal.

Moreover, social and economic variables such as education, income, age, and residence play a role in the results of financial inclusion programs. It means that technological innovations in finance can be insufficient when addressing disparities in society.

Accordingly, it can be concluded that a transition from the access model of financial inclusion to the utilization approach is necessary.

5.4 Policy Implications

Accordingly, the outcomes of the study imply the necessity of changing the orientation of the ongoing financial inclusion efforts, which currently emphasize the importance of providing broader access to financial services. It is important to shift the focus of policy initiatives from access-enhancing to usage-stimulating approaches.

It is necessary to introduce incentives that would make people more likely to use mobile money services actively. Such a strategy may include the development of innovative products that would motivate customers to conduct regular transactions. For instance, connecting mobile money services to utilities payments and educational expenditures as well as state transfers would facilitate usage of mobile money products.

In addition, it is crucial to expand the range of services offered by financial institutions and mobile network operators. The results of the survey revealed that people rarely use savings and credit services. As such, more activities of financial intermediation in mobile money systems are necessary. Financial institutions and mobile network operators have to work together in order to create more attractive savings and credit products for low-income customers.

Literacy, financial and digital, has to be enhanced. Since the age and financial inclusion have a negative relationship, it is necessary to invest in the program that specifically addresses older individuals. Training sessions should concentrate on boosting their confidence and skills to use financial services provided digitally.

Rural-urban divide will be overcome through strategic investments in infrastructure. This can be accomplished by more agent locations, improvement of network coverage and mobile phone provision. Otherwise, the rural communities will be always disadvantaged.

Higher education and income levels are positively correlated with financial inclusion and, therefore, policymakers should integrate this variable with other economic development policies. Improving educational quality and money-making could be an indirect way of supporting financial inclusion through enabling people to possess the skills they need to effectively use financial services.

What needs to happen is that the regulatory environment should evolve to such an extent that it encourages innovation and at the same time safeguard the end-users. It involves enhancing consumer protection, price transparency and addressing the risks of digital finance.

Lastly, the indicators applied to measure financial inclusion have to be increased. The use of measures based only on access may give misleading information on the achievements made toward promoting financial inclusion.

5.5 Limitations of the Study

This research relies on cross-sectional data, making it difficult to prove causation between mobile money and financial inclusion. Even though correlations have been found, it cannot be conclusively said that causation exists.

The reliance on secondary data means that the researcher is bound by the variables that are present. This makes it impossible to include other important factors such as perception and trust into the study.

5.6 Areas for Further Research

Further research can be carried out using longitudinal data to look at the impact that mobile money usage has on financial inclusion. Research can also be carried out qualitatively to find out the role played by individual behaviour in the adoption of digital financial services.

Further research can concentrate on particular aspects of mobile money like digital savings and credit in order to find out the impact on financial inclusion.

5.7 Overall Conclusion

Conclusion

The current study reveals empirically that mobile money plays an instrumental role in promoting financial inclusion in Uganda. Nonetheless, the efficiency of the technology hinges

on the level of participation and diversity that individuals show when engaging with the existing financial options. The implementation of both a technological and socio-economic strategy is imperative for creating an inclusive financial system.

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