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COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

SCHOOL OF STATISTICS AND PLANNING

THE EFFECT OF MOBILE MONEY USAGE ON HOUSEHOLD CONSUMPTION IN UGANDA

BY

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A DISSERTATION SUBMITTED TO SCHOOL OF STATISTICS AND PLANNING IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE AWARD OF A BACHELOR'S DEGREE OF SCIENCE IN QUANTITATIVE ECONOMICS OF MAKERERE UNIVERSITY

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DECLARATION

I hereby declare that this dissertation entitled **"The Effect of Mobile Money Usage on Household Consumption in Uganda"** is my original work and has not been submitted to any other university, institution, or awarding body for the award of any academic qualification. I further declare that all sources of information, ideas, data, and materials used in this study have been duly acknowledged through appropriate citations and referencing in accordance with accepted academic standards.

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APPROVAL

This research entitled **"The Effect of Mobile Money Usage on Household Consumption in Uganda"** has been produced under my close supervision and guidance.

Ms. Ashaba Claire

Signed.....

Date.....28/10/2026.....

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May God bless you all abundantly.

DEDICATION

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LIST OF ABBREVIATIONS

GSMA Global System for Mobile Communications Association

H_0 Null Hypothesis

IMF International Monetary Fund

MM Mobile Money

SD Standard Deviation

SIJRI Scriptora International Journal of Research and Innovation

STATA Statistical software for data analysis

UCC Uganda Communications Commission

UBOS Uganda Bureau of Statistics

UGX Uganda Shillings

UNHS Uganda National Household Survey

VIF Variance Inflation Factor

ABSTRACT

Mobile money has become an important financial service in Uganda, yet its relationship with household consumption remains insufficiently understood, particularly across rural and urban households. This study examined the effect of mobile money usage on household consumption in Uganda, with specific focus on mobile money adoption and rural–urban differences.

The study used a quantitative cross-sectional design based on secondary data from the 2023/24 Uganda National Household Survey conducted by the Uganda Bureau of Statistics. The analysis included 1,576 households. Household consumption was measured as the natural logarithm of annual per-capita household consumption, while mobile money adoption was the main explanatory variable. Age, sex, education level, household size, employment status, household wealth, geographical region and rural–urban residence were included as control variables. Descriptive statistics, bivariate analysis and multivariable linear regression were conducted using STATA.

The findings showed that mobile money adoption was positively and statistically significantly associated with household consumption. Households with an active mobile money account had approximately 12.8% higher annual per-capita household consumption than households without an active account, holding other factors constant. However, the interaction between mobile money adoption and urban residence was not statistically significant, indicating no evidence of a rural–urban differential in this relationship. The study concludes that mobile money adoption is positively associated with household consumption in Uganda, although the cross-sectional design does not establish causality. The study recommends strengthening access to affordable digital financial services and financial literacy to enhance effective mobile money use among household.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background and foundation of the study on the effect of mobile money usage on household consumption in Uganda. It begins with the global development of digital financial services and progressively narrows to the role of mobile money in developing economies, Sub-Saharan Africa and Uganda. The chapter then presents the problem statement, general and specific objectives, research hypotheses, scope, justification and significance of the study. Finally, it presents the conceptual framework illustrating the expected relationship between mobile money usage and household consumption while accounting for household characteristics and socioeconomic differences.

1.1 Background of the Study

The digitalisation of financial services has significantly changed how individuals and households access, transfer and manage money. The increasing availability of mobile phones, internet connectivity and digital financial technologies has expanded opportunities for people to access financial services beyond traditional banking institutions (GSMA, 2024). Digital financial services can reduce geographical and financial barriers to formal financial services and are particularly important for populations that have historically had limited access to conventional banking (World Bank, 2022). Globally, the expansion of digital financial services has continued, although differences in access and usage remain across countries and population groups (World Bank, 2025). Within this broader transformation, mobile money has emerged as an important financial service that allows users to send and receive money, make payments, save and, in some contexts, access credit through mobile phones (GSMA, 2025).

The use of mobile money has expanded rapidly in developing economies, where limited access to formal financial institutions and the high cost of conventional financial transactions have increased the importance of mobile-based financial services. Mobile money provides households with relatively accessible means of transferring funds, receiving remittances and conducting financial transactions without necessarily maintaining a conventional bank account (Apeti, 2023). The

global scale of mobile money demonstrates its growing importance in household financial management. By 2024, registered mobile money accounts had exceeded two billion globally, while active accounts and transaction values had also increased substantially (GSMA, 2025). This expansion has made mobile money an increasingly important component of financial inclusion and household economic activity, particularly in low- and middle-income countries.

Sub-Saharan Africa has been at the centre of the global expansion of mobile money. The region has consistently accounted for a large share of mobile money accounts and transactions worldwide and remains the leading region in mobile money adoption (GSMA, 2025). The widespread use of mobile money in the region is partly associated with the limited reach of conventional banking services and the need for affordable mechanisms for transferring money across households and geographical locations (Simione & Muehlschlegel, 2023). Mobile money has therefore become an important channel through which households receive remittances, make payments, save and manage temporary income shortages. Evidence from Tanzania, for example, indicates that access to mobile money improved households' ability to smooth consumption and protect important household investments during economic shocks (Tabetando et al., 2022).

Uganda forms part of this rapidly developing mobile-money environment. Mobile money has become an important component of the country's financial system and has contributed to the expansion of access to financial services. The growth of mobile money has enabled individuals and households to conduct financial transactions without relying entirely on traditional banking institutions. In 2024, 67.7 percent of Ugandan adults had a mobile money account, illustrating the widespread penetration of mobile money within the adult population (World Bank, 2025). Mobile money in Uganda is also increasingly used for activities beyond person-to-person transfers, including saving, borrowing and receiving income or transfers (Simione & Muehlschlegel, 2023).

The expansion of mobile money in Uganda has important implications for household economic welfare, particularly household consumption. Consumption is an important indicator of household welfare because it reflects the ability of households to meet their needs through expenditure on food, housing, education, healthcare and other goods and services. Mobile money may influence household consumption by making it easier for households to receive income and transfers, access financial resources and make payments (Munyegera & Matsumoto, 2016). Research in Uganda

has also linked mobile money use with productive activities and household welfare, including agricultural investment among rural households (Tabetando et al., 2022). At the same time, the benefits associated with mobile money may not be experienced equally by all households because differences in income, education, household characteristics and location can influence both the use of mobile money and household economic outcomes (Okello Candiya Bongomin et al., 2024).

1.2 Problem Statement

Mobile money has become an important part of Uganda's financial system and has expanded access to financial services. By 2024, 67.7% of Ugandan adults had a mobile money account, while 53.6% reported saving and 29.0% reported borrowing through a bank or mobile money (World Bank, 2025). This growing use suggests that mobile money is increasingly integrated into household financial activities beyond money transfers.

However, it remains unclear whether increased mobile money usage translates into improved household consumption in Uganda. While evidence from developing countries suggests that mobile money can improve consumption and reduce consumption volatility (Apeti, 2023), studies in Uganda have mainly examined financial inclusion, saving, borrowing, remittances and general welfare rather than household consumption specifically (Simione & Muehlschlegel, 2023; Tabetando et al., 2022). In addition, mobile money taxation has increased transaction costs and reduced usage, particularly among rural and low-income users (Spadavecchia et al., 2025).

If this evidence gap is not addressed, policymakers and other stakeholders may have limited empirical basis for determining whether the continued expansion and regulation of mobile money are contributing to improved household welfare. This may also make it difficult to design appropriate financial-inclusion policies, particularly regarding affordability and access for poorer and rural households.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study is to examine the effect of mobile money usage on household consumption in Uganda.

1.3.2 Specific Objectives

i. To examine the effect of mobile money adoption on household consumption in Uganda.
ii. To assess the differential impact of mobile money usage on household consumption among rural and urban households in Uganda.

1.4 Research Hypotheses

H_{01}: There is no statistically significant effect of mobile money adoption on household consumption in Uganda.

H_{02}: There is no statistically significant difference in the effect of mobile money usage on household consumption between rural and urban households in Uganda.

1.5 Scope of the Study

1.5.1 Content Scope

The study examined the effect of mobile money usage on household consumption in Uganda. Specifically, it focused on the effect of mobile money adoption on household consumption and the differential impact of mobile money usage on household consumption among rural and urban households.

1.5.2 Geographical Scope

The study covered Uganda as a whole and used nationally representative data from the UNHS 2023/24.

1.5.3 Time Scope

The study used cross-sectional data collected during the 2023/2024 financial year through the UNHS 2023/24.

1.6 Justification of the Study

The study is justified by the rapid expansion of mobile money in Uganda and the need to understand whether this expansion translates into measurable improvements in household welfare. Recent Global Findex evidence shows that mobile money account ownership among Ugandan

adults reached 67.7 percent in 2024, demonstrating the extent to which mobile money has become integrated into household financial behaviour (World Bank, 2025). At the same time, evidence that mobile money can increase consumption and reduce consumption volatility suggests that the service may have important welfare implications (Apeti, 2023).

The study is also justified by changes in Uganda's policy environment. The mobile money tax has altered the cost of using mobile money, and recent evidence indicates that its effects were particularly pronounced among rural and low-income users (Spadavecchia et al., 2025).

1.7 Significance of the Study

The findings of the study are expected to be significant to policymakers, financial-sector regulators, telecommunications companies, households, researchers and other stakeholders interested in digital financial inclusion and household welfare.

For the Government of Uganda and policymakers, the findings will provide contemporary evidence on whether mobile money usage is associated with household consumption. Such evidence may inform policies concerning digital financial inclusion, transaction costs and taxation.

For the Bank of Uganda and financial-sector regulators, the study may provide evidence useful for assessing the welfare implications of digital financial services. Uganda's financial inclusion strategy increasingly recognises digital finance as an important avenue for expanding access to financial services, while recent policy discussions emphasise reducing the costs of digital financial services and improving consumer confidence (International Monetary Fund, 2024).

For telecommunications companies and financial-technology providers, the findings may identify the forms of mobile money usage that are most strongly associated with household consumption. Understanding how mobile money adoption is associated with household consumption may support the development of products that respond to the financial needs of different household groups.

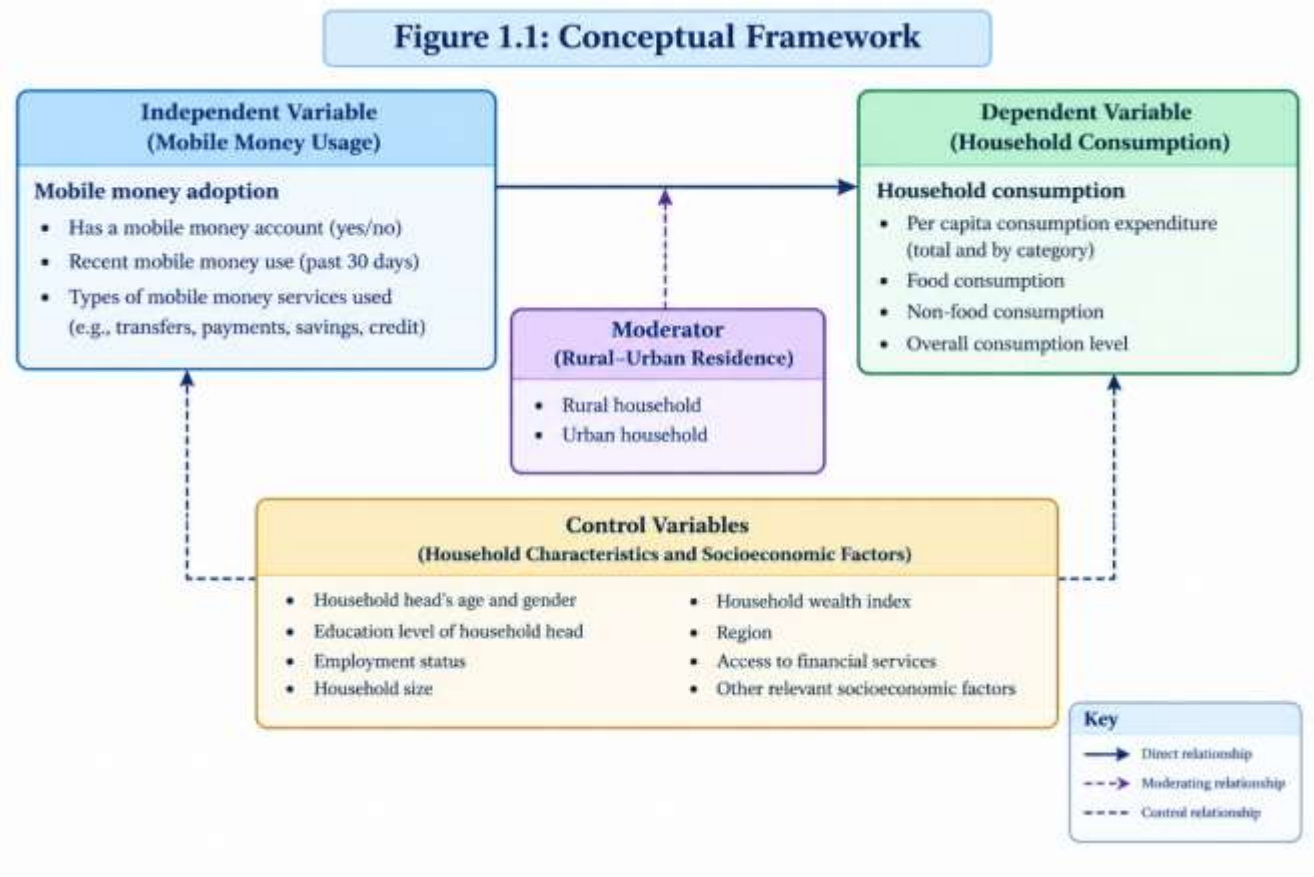
For households and communities, the study may contribute to a better understanding of the potential economic implications of mobile money usage.

For the academic and research community, the study will contribute recent empirical evidence to the literature on digital finance and household welfare.The study extends existing evidence by examining the relationship between mobile money adoption and household consumption using recent Ugandan data, while considering differences across wealth, location, region, and rural–urban residence

1.8 Conceptual Framework

The conceptual framework illustrates the expected relationship between mobile money adoption and household consumption in Uganda. Mobile money adoption is the independent variable and is measured by whether a household has a mobile money account, recent use of mobile money services, and the types of services accessed, including transfers, payments, savings and credit. These factors are expected to influence household consumption, the dependent variable, which is measured using per capita consumption expenditure, including food, non-food and overall household consumption.

The framework further identifies rural–urban residence as a moderator, recognizing that the relationship between mobile money adoption and household consumption may differ between rural and urban households. The relationship is examined while controlling for household characteristics and socioeconomic factors, including the household head's age and sex, education level, employment status, household size, household wealth, geographical region and access to financial services.


Figure 1.1: Conceptual Framework
Independent Variable
(Mobile Money Usage)
Mobile money adoption
Has a mobile money account (yes/no)
Recent mobile money use (past 30 days)
Types of mobile money services used
(e.g., transfers, payments, savings, credit)
Dependent Variable
(Household Consumption)
Household consumption
Per capita consumption expenditure
(total and by category)
Food consumption
Non-food consumption
Overall consumption level
Moderator
(Rural–Urban Residence)
Rural household
Urban household
Control Variables
(Household Characteristics and Socioeconomic Factors)
Household head's age and gender
Education level of household head
Employment status
Household size
Household wealth index
Region
Access to financial services
Other relevant socioeconomic factors
Key
Direct relationship
Moderating relationship
Control relationship

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature on the effect of mobile money usage on household consumption. The review is organised according to the specific objectives of the study, namely the effect of mobile money adoption on household consumption, and differences in the effect of mobile money usage between rural and urban households. The chapter also discusses the theoretical perspectives underpinning the study, relevant household characteristics used as control variables, and the research gaps that justify the present study.

2.1 Theoretical Review

2.1.1 Financial Inclusion Theory

Financial inclusion theory provides an important basis for understanding how mobile money can influence household economic welfare. Financial inclusion refers to the ability of individuals and households to access and use appropriate financial services to participate effectively in economic activities (Simione & Muehlschlegel, 2023). Mobile money has expanded this access, particularly for people with limited access to conventional banking services and those living far from formal financial institutions (Mundonde & Makoni, 2026).

The theory suggests that mobile money reduces financial barriers by enabling households to conveniently send and receive money, save, and access financial resources through mobile devices and agent networks. In Uganda, mobile money users are more likely to engage in saving, borrowing and remittance activities, indicating its contribution to broader financial inclusion (Simione & Muehlschlegel, 2023). These services can help households manage income and meet consumption needs, especially during periods of financial difficulty. Evidence from Tanzania, for example, shows that mobile money can help households smooth consumption during economic shocks (Abiona & Koppensteiner, 2022).

The theory is relevant to this study because mobile money usage reflects a household's engagement with financial services, which in the broader literature includes active use, saving, borrowing, and

receiving income through mobile money. However, access alone may not guarantee benefits, as digital literacy and socioeconomic conditions can influence how effectively households use these services (Okello Candiya Bongomin et al., 2024). Therefore, financial inclusion theory provides a basis for examining the relationship between mobile money usage and household consumption, while recognising that this relationship may vary according to wealth, location and other household characteristics.

2.1.2 Consumption-Smoothing Perspective

The consumption-smoothing perspective explains how households seek to maintain relatively stable consumption despite fluctuations in income or unexpected economic shocks. Access to savings, transfers and credit can help households avoid sharp reductions in essential expenditures during periods of financial difficulty (Deaton & Alhabeeb, 1992).

Mobile money can support consumption smoothing by enabling households to quickly receive transfers, access savings and obtain financial support when income is temporarily insufficient. Evidence from Tanzania shows that mobile money improved households' ability to maintain consumption and human-capital investments during economic shocks (Abiona & Koppensteiner, 2022). Similarly, studies in Kenya and across developing countries indicate that mobile money can strengthen household resilience and reduce consumption volatility (Atta-Aidoo et al., 2024)

This perspective is relevant to the present study because household consumption is the main welfare outcome. It suggests that mobile money may improve consumption not only by increasing household resources but also by helping households maintain expenditure when income is unstable. This provides a theoretical basis for examining the effect of mobile money usage on logarithm of per capita annual household consumption in Uganda.

2.2 Empirical Literature Review

2.2.1 Mobile Money Adoption and Household Consumption

The first objective of the study is to examine the effect of mobile money adoption on household consumption in Uganda. In this study, adoption refers to whether a household uses mobile money services, distinguishing mobile-money users from non-users. This distinction is important because

access to a mobile phone or financial service does not necessarily imply actual use of mobile money. Adoption therefore provides the starting point for assessing whether households that participate in mobile-money services experience different levels of consumption from those that do not.

Munyegera and Matsumoto (2016) provide direct evidence on this relationship using panel data from 846 rural Ugandan households. Their analysis, which applied household fixed effects, instrumental variables and propensity-score matching, found that mobile-money access significantly increased real per-capita household consumption. The authors further found that mobile-money users received remittances more frequently and in larger amounts, identifying remittances as an important channel through which mobile money affected household welfare.

Building on the financial-access mechanism identified by Munyegera and Matsumoto (2016), Simione & Muehlschlegel, (2023) examined the broader financial activities associated with mobile-money adoption in Uganda using nationally representative micro-level data. Their propensity-score matching analysis found that mobile-money users were 2.4 percentage points more likely to receive remittances and 1.8 percentage points more likely to send remittances than non-users. The same analysis found that users were 0.3 percentage points more likely to save and 0.3 percentage points more likely to borrow. These findings complement Munyegera and Matsumoto (2016) by showing that adoption is associated not only with remittance transfers but also with wider participation in saving and borrowing activities that can improve households' ability to manage their financial resources.

The relationship between mobile-money adoption and household welfare is further supported by Tabetando et al. (2022), who examined rural Ugandan households using plot-, household- and community-level panel data. Their analysis found that mobile-money adoption increased per-capita farm income by 13%. Mobile-money adoption also increased the probability of applying chemical fertiliser to maize plots by 11 percentage points and adopting high-yielding maize seeds by 8.2 percentage points. These findings extend the remittance-based explanation provided by Munyegera and Matsumoto (2016) by demonstrating an additional pathway through which adoption may influence household welfare: access to mobile money can support agricultural

investment and income generation, thereby increasing resources that households can allocate to consumption.

Apeti (2023) extends the analysis beyond Uganda by examining 76 developing countries over the period 1990–2019. Using entropy balancing, the study found that mobile-money adoption increased the level of household consumption and reduced consumption volatility. Apeti (2023) identified financial inclusion and migrant remittances as important channels linking mobile-money adoption to consumption outcomes. This finding reinforces the Ugandan results of Munyegera and Matsumoto (2016) and Simione and Muehlschlegel (2023), particularly regarding the role of improved financial access and remittance transfers, while demonstrating that the relationship between mobile-money adoption and household consumption is also observed across a wider group of developing economies.

The consumption relationship is also reflected in research on mobile payments. Hu and Hou (2024), using household-finance survey data from China, found that mobile-payment use directly increased household consumption and that digital inclusive finance provided an additional channel through which mobile payments influenced consumption. Their analysis further found differences in the consumption effect according to household income, household characteristics and region. These findings complement Apeti (2023) by showing that digital financial services can influence consumption directly while also operating through broader financial-inclusion mechanisms. However, the Chinese setting differs from Uganda in terms of financial infrastructure, income levels and patterns of digital-financial-service use, making country-specific analysis necessary.

Gopalakrishna and Ravi (2026) further examined the relationship between mobile-payment adoption and household expenditure using the 2017 Chinese General Social Survey and an augmented inverse-probability-weighting estimator. Their analysis found that mobile-payment adoption significantly increased expenditure on consumer goods as well as cultural and leisure activities. The effect differed across expenditure categories, indicating that digital-payment adoption may influence not only the overall level of household expenditure but also the composition of consumption. This finding extends the results of Hu and Hou (2024) by demonstrating that the relationship between digital-financial-service adoption and household welfare can be reflected in specific categories of household expenditure.

The literature presents a connected explanation of how mobile-money adoption can influence household consumption. Munyegera and Matsumoto (2016) directly linked mobile-money access with higher real per-capita consumption and identified remittances as an important mechanism. Simione and Muehlschlegel (2023) complemented this finding by demonstrating that adoption is associated with greater participation in remittances, saving and borrowing. Tabetando et al. (2022) added agricultural income generation as another pathway through which adoption can improve household resources. Apeti (2023) subsequently demonstrated that the relationship between mobile-money adoption, financial inclusion, remittances and consumption volatility extends across developing countries. Hu and Hou (2024) and Gopalakrishna and Ravi (2026) further linked digital-payment adoption with household consumption and expenditure patterns in China. Taken together, these studies suggest that mobile-money adoption can affect consumption through improved financial access, remittance transfers, income generation and the ability to manage household financial resources.

2.2.2 Rural–Urban Differences in the impact of Mobile Money usage on Household Consumption

The second objective examines whether the impact of mobile money usage on household consumption differs between rural and urban households in Uganda. Rural and urban households operate within different socioeconomic and financial environments, particularly in terms of access to formal financial institutions, employment opportunities, digital infrastructure, network coverage and mobile-money services. These differences may influence both the extent of mobile-money use and the ability of households to translate such use into improved consumption outcomes. Rural–urban residence is therefore an important dimension for examining whether the consumption effects of mobile money are heterogeneous across households.

Evidence from Uganda indicates substantial differences in mobile-money participation across rural and urban populations. (Simione and Muehlschlegel, 2023) reported that mobile-money use was 46.8% among rural respondents compared with 73.4% among urban respondents. This disparity suggests that geographical location is associated with access to and use of mobile-money services. However, differences in usage rates do not necessarily imply that the effect of mobile money on household consumption is also different. This distinction creates a need to move beyond

comparisons of participation and examine whether mobile-money usage generates different consumption outcomes across rural and urban households.

Digital literacy may partly explain differences in the effectiveness of mobile-money use across locations. Okello Candiya Bongomin et al. (2024), in a study of unbanked poor women, youth and persons with disabilities in rural Uganda, found that digital literacy strengthened the relationship between financial technologies and digital financial inclusion. Their findings further showed that mobile money positively contributed to digital financial inclusion. These results imply that households with greater digital capabilities may be better positioned to use mobile-money services effectively. Since digital skills, access to technology and financial-service infrastructure may vary between rural and urban areas, the benefits derived from mobile money may similarly differ by place of residence.

Previous evidence also demonstrates that mobile money can influence household consumption, particularly among rural households. Munyegera and Matsumoto (2016), using data from 846 rural Ugandan households, found that access to mobile money had a positive and significant effect on real per-capita consumption. The authors associated this effect partly with increased frequency and value of remittances received through mobile money. Although the study provides important evidence on the welfare implications of mobile money in rural Uganda, it focused exclusively on rural households and therefore did not establish whether the consumption effect was different from that experienced by urban households.

Evidence from other developing countries further supports the possibility of location-specific effects. Zhang et al. (2022) using China Household Finance Survey data and instrumental-variable estimation, found that mobile payments significantly increased rural household consumption. The effect was particularly pronounced among households experiencing greater financial exclusion and those located in less-developed areas. Similarly,Hu and Hou (2024) found that the relationship between mobile payments and household consumption varied across regions and income groups. Although these studies were conducted in China, they demonstrate that the consumption effects of digital financial services may depend on the economic and geographical environment in which households operate.

Cross-country evidence also points to heterogeneity in the welfare effects of mobile money. Apeti (2023), examining 76 developing countries, found that the effect of mobile money on consumption volatility varied according to structural characteristics, including the proportion of the population living in rural areas and the level of economic development. This suggests that the benefits of mobile money are not necessarily uniform across different household and geographical contexts. The finding provides further justification for investigating whether rural and urban households in Uganda experience different consumption effects from mobile-money usage.

2.2.3 Household Characteristics and Household Consumption

Household characteristics are included as control variables because demographic, socioeconomic and geographical differences may influence household consumption independently of mobile-money usage. The present study controls for age, sex, education, household size, wealth, rural/urban residence and geographical region. Including these characteristics helps isolate the relationship between mobile-money usage and household consumption while accounting for differences in household circumstances.

Age of Household Head. Age of the household head may influence household consumption because individuals at different stages of the life cycle may differ in their income-generating capacity, employment opportunities, accumulated resources and household responsibilities. Age may also influence the use of mobile financial services because younger and older individuals may differ in their familiarity with digital technologies (Simione & Muehlschlegel, 2023).

Sex of Household Head. The sex of the household head may influence household consumption because male- and female-headed households may differ in income opportunities, asset ownership, household responsibilities and access to financial services. These differences may also affect how households participate in mobile-money services and use financial resources (Diallo, 2025).

Education of Household Head. Education can influence household consumption through its effects on employment opportunities, income generation, financial decision-making and the ability to understand financial services (Dunne and Kasekende, 2017). Education may also improve the capacity of household members to use digital financial technologies effectively. In rural Uganda, Okello Candiya Bongomin et al. (2024) found that digital literacy plays an important moderating

role in the relationship between financial technologies, including mobile money, and digital financial inclusion.

Household Size. Household size is likely to influence household consumption because larger households generally require greater expenditure on food, education, healthcare, housing and other basic necessities. However, when consumption is measured on a per-capita basis, the effect of household size may be reduced because some household goods and services are shared among members. The UNHS 2023/24 specifically collected information on household composition and consumption expenditure, allowing differences in household welfare to be examined across households of different sizes (UBOS, 2025).

Household Wealth. Household wealth represents the accumulated assets and economic resources available to a household and is expected to influence its ability to meet consumption needs and cope with financial shocks. Wealth may also affect the way households use mobile money, since households with fewer resources may rely more heavily on mobile money for receiving transfers, saving and managing short-term financial needs, while wealthier households may combine mobile money with formal banking services (Yao et al., 2023).

Rural/Urban Residence. Rural and urban households may differ considerably in their access to financial institutions, markets, employment opportunities, digital technologies and mobile-money agents (Munyegera and Matsumoto, 2016). Mobile money may be particularly important for rural households because it can reduce geographical barriers to accessing financial services. However, the benefits of digital financial services may be constrained by differences in digital literacy and access to technology. Okello Candiya Bongomin et al. (2024) found that digital literacy influences the effectiveness of financial technologies in promoting financial inclusion among vulnerable populations in rural Uganda.

Geographical Region. Geographical region may influence household consumption because Uganda's regions differ in economic opportunities, infrastructure, access to financial services and general socioeconomic conditions. Regional differences may also affect the availability and usefulness of mobile-money services because households depend on mobile networks, agents and local economic activities to conduct transactions. The UNHS 2023/24 provides household

expenditure and financial-inclusion information at national, rural-urban and sub-regional levels, making it possible to examine geographical differences in household welfare and financial-service use (UBOS, 2025).

2.3 Research Gap

Although existing literature shows that mobile money can improve financial inclusion, facilitate remittances, support saving and borrowing, and enhance household welfare, recent Uganda-specific evidence on its relationship with household consumption remains limited. Munyegera and Matsumoto (2016) found that mobile-money access increased real per-capita consumption among rural Ugandan households, while Tabetando et al. (2022) linked mobile-money adoption to improved farm income and agricultural investment. Simione and Muehlschlegel (2023) further found that mobile-money users were more likely to participate in remittance, saving and borrowing activities, while Apeti (2023) found positive effects of mobile money on consumption across developing countries. However, these studies did not directly examine the effect of mobile-money adoption on overall household consumption using recent nationally representative Ugandan data.

There is also a gap in the timeliness and methodological relevance of existing evidence. Much of the direct Ugandan evidence linking mobile money to household welfare is based on earlier datasets that may not reflect the current digital financial environment. The availability of the UNHS 2023/24 provides recent nationally representative information on household consumption, financial-service use and socioeconomic characteristics, creating an opportunity to update existing evidence. Moreover, mobile-money users and non-users may differ in characteristics such as education, wealth, age and residence, which may independently influence consumption. The present study addresses these concerns by using recent UNHS 2023/24 data, controlling for relevant household characteristics and examining adoption and rural–urban differences simultaneously. Thus, the study contributes contemporary evidence addressing the two specific objectives concerning mobile-money adoption and rural–urban differences in household consumption.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology that was used to examine the effect of mobile money usage on household consumption in Uganda. The chapter describes the research design, study area, study population, source of data, measurement and operationalisation of variables, data analysis methods, data presentation, ethical considerations and limitations of the study. The methodological procedures are aligned with the two specific objectives of the study, namely examining the effect of mobile money adoption on household consumption in Uganda and examining whether the effect of mobile money usage on household consumption differs between rural and urban households.

3.1 Research Design

The study adopted a quantitative cross-sectional research design to examine the effect of mobile money usage on household consumption in Uganda. The cross-sectional design was appropriate because the study analysed information collected from households at a particular period without following them over time, while the quantitative approach enabled numerical measurement and statistical analysis of mobile money usage, household consumption, and relevant household characteristics.

3.2 Study Area

The study was conducted in Uganda, covering households across the country. Uganda was appropriate for the study because the Uganda National Household Survey (UNHS) 2023/24 provided nationally representative household-level information on financial-service use, household expenditure, and socioeconomic characteristics at national, rural–urban, and sub-regional levels.

3.3 Population of the Study

The study population comprised households covered by the Uganda National Household Survey (UNHS) 2023/24. From the available survey households, 1,576 households were selected for the analysis. Households with missing information on the key study variables were excluded where such missing information prevented their inclusion in the regression analysis.

3.4 Source of Data

The study used secondary data from the Uganda National Household Survey (UNHS) 2023/24, conducted by the Uganda Bureau of Statistics (UBOS).

3.5 Measurement and Operationalisation of Variables

The dependent variable, household consumption, was measured using household expenditure on food and non-food items on a per-capita basis, with the natural logarithm of annual per-capita consumption used in the regression analysis. The main independent variable, mobile money usage, was measured primarily through mobile money adoption based on the UNHS 2023/24 indicator. Rural–urban residence was the moderating variable and was assessed through an interaction between mobile money adoption and place of residence. The study controlled for age, sex, education level, household size, employment status, household wealth, and geographical region to account for other factors associated with household consumption and mobile money adoption.

Table 1: Measurement and Operationalization of Variables

Variable	**Type**	**Variable Indicators**	**Measurement/Operationalization**	**Scale of Measurement**
Mobile Money Adoption	Independent	Mobile money use/adoption; active user status; (whether the household has an active mobile money account)	Coded according to the relevant UNHS 2023/24 indicators. Adoption was represented by household mobile money adopter status.	Nominal/Ordinal
Household Consumption	Dependent	Household consumption expenditure; food and non-food consumption	Measured using household consumption/expenditure indicators available in UNHS 2023/24. Per-capita consumption accounted for household-size differences;	Ratio/Continuous

		expenditure; per-capita consumption	the natural logarithm of annual per-capita consumption was used in the regression analysis.	
Age of Household Head	Control	Age in completed years	Recorded age of household head in completed years.	Ratio
Sex of Household Head	Control	Male/Female	Coded according to the reported sex of the household head.	Nominal
Education of Household Head	Control	Highest education level attained	Measured according to the highest level of education attained by the household head.	Ordinal
Household Size	Control	Number of household members	Measured as the total number of usual household members.	Ratio
Employment Status	Control	Employment participation/status	Measured according to the employment status of the household head, based on the relevant UNHS 2023/24 classification.	Nominal
Household Wealth	Control	Household welfare/wealth position	Measured using the available household wealth/welfare indicators in the UNHS 2023/24.	Continuous/Ordinal
Rural/Urban Residence	Moderating	Rural/Urban	Measured according to the household's residence classification in UNHS 2023/24. An interaction term between mobile money	Nominal

			adoption and residence was included to determine whether the relationship differed between rural and urban households.	
Geographical Region	Control	Region/Sub-region	Measured according to the geographical region/sub-region in which the household is located.	Nominal

3.6 Data Analysis Methods

The data were analysed quantitatively using STATA. Data analysis involved data cleaning and preparation, descriptive and bivariate analysis, multivariable linear regression, diagnostic tests, and incorporation of the UNHS survey design.

3.6.1 Data Cleaning and Preparation

The UNHS 2023/24 dataset was first cleaned and prepared for analysis by checking for missing values, duplicates, inconsistent responses, outliers, and invalid codes.

3.6.2 Descriptive Analysis

Descriptive analysis was conducted to describe the characteristics of the households included in the study and the distribution of the main study variables. Frequencies and percentages were used for categorical variables, including mobile money adoption and rural–urban residence, while means, standard deviations, and minimum and maximum values were used for continuous variables such as household consumption, household size, and age, where appropriate.

3.6.3 Bivariate Analysis

Bivariate analysis was conducted to examine the unadjusted relationships between mobile money adoption, household characteristics and household consumption before the multivariable models were estimated. Differences in mean household consumption between adopters and non-adopters, and between the categories of binary household characteristics, were tested using independent-samples t-tests, while one-way analysis of variance (ANOVA) was used for characteristics with

more than two categories. Pearson correlation coefficients were used to examine the relationship between continuous household characteristics and log annual per-capita household consumption, and chi-square tests were used to examine the association between mobile money adoption and categorical household characteristics. Household consumption was also compared between adopters and non-adopters separately for rural and urban households. Because household consumption is right-skewed, the comparisons of consumption were repeated using log-transformed consumption. The bivariate tests were unweighted and were used to screen relationships; the survey weights described in Section 3.6.9 were applied in the multivariable regression models.

3.6.4 Multivariable Linear Regression Analysis

Multivariable linear regression was used to estimate the adjusted relationship between mobile money adoption and household consumption while controlling for relevant household characteristics. The dependent variable was the natural logarithm of annual per-capita household consumption. The basic model was specified as:

$$\ln(C_i) = \beta_0 + \beta_1 MM_i + \beta_2 AGE_i + \beta_3 SEX_i + \beta_4 EDU_i + \beta_5 HHSIZE_i + \beta_6 EMP_i + \beta_7 WEALTH_i + \beta_8 RES_i + \beta_9 REG_i + \varepsilon_i$$

Where;

- C_i represents annual per-capita household consumption
- MM_i represents mobile money adoption/usage
- AGE_i represents age of the household head
- SEX_i represents sex of the household head
- EDU_i represents education level
- $HHSIZE_i$ represents household size
- EMP_i represents employment status
- $WEALTH_i$ represents household wealth
- RES_i represents rural–urban residence
- REG_i represents geographical region
- ε_i represents the error term.

The coefficient β_1 was the main coefficient of interest for the first objective and indicated the adjusted association between mobile money adoption and household consumption.

3.6.5 Analysis of Mobile Money Adoption and Household Consumption

The first objective was addressed by examining differences in household consumption between mobile money adopters and non-adopters. Descriptive analysis summarized household consumption for the two groups using the mean, standard deviation, and minimum and maximum values, with the difference in mean consumption providing an initial indication of whether adopters had higher or lower consumption. Bivariate analysis then tested whether the observed difference was statistically significant using an independent-samples t-test, reporting the mean difference, t-statistic, and p-value, with $p < 0.05$ indicating a statistically significant difference. Multivariable linear regression was subsequently used to determine whether the relationship remained after controlling for household characteristics, including age, sex, education, household size, employment, wealth, residence, and region. Since household consumption was log-transformed, the mobile money coefficient was interpreted as the approximate percentage difference in consumption between adopters and non-adopters, holding other factors constant.

3.6.6 Analysis of Rural–Urban Differences in the Effect of Mobile Money Adoption

The second objective examined whether the relationship between mobile money adoption and household consumption differed between rural and urban households. Rural–urban residence was incorporated as a moderating variable in the regression model. This was achieved by including an interaction term between mobile money adoption and household residence. The moderation model was specified as:

$$\ln(C_i) = \beta_0 + \beta_1 MM_i + \beta_2 RES_i + \beta_3 (MM_i \times RES_i) + \beta_4 X_i + \varepsilon_i$$

Where;

- $\ln(C_i)$ represents the natural logarithm of annual per-capita household consumption
- MM_i represents mobile money adoption
- RES_i represents rural–urban residence
- $MM_i \times RES_i$ represents the interaction between mobile money adoption and residence
- X_i represents the vector of control variables

- ε_i represents the error term.

The interaction coefficient β_3 was the main coefficient of interest for the second objective. A statistically significant interaction term indicated that the relationship between mobile money adoption and household consumption varies according to rural or urban residence. Predicted or marginal effects were examined to aid interpretation of the interaction term across the two residence categories.

3.6.7 Control Variables

The regression models controlled for household characteristics that could influence household consumption and could also be associated with mobile money adoption. These included the age, sex and education of the household head, household size, employment status, household wealth, place of residence and geographical region.

3.6.8 Diagnostic Tests and Model Assumptions

Diagnostic tests were conducted to assess whether the assumptions of the regression model were satisfied. Multicollinearity was assessed using the Variance Inflation Factor (VIF), while heteroskedasticity was tested and robust standard errors were used where necessary. The distribution of the dependent variable and influential observations were also examined. Appropriate model specification tests were conducted to assess the adequacy of the fitted regression models. For the interaction model, the interaction term was also examined for statistical significance and interpreted together with the main effects.

3.6.9 Survey Design

Since the UNHS 2023/24 was a nationally representative household survey, the analysis took into account the survey sampling design through the use of sampling weights. The survey weights provided in the UNHS dataset were applied in the regression analysis to ensure that the estimates were representative of the Ugandan household population, and robust standard errors were reported. This was applied to both the main regression analysis and the rural–urban moderation analysis.

3.6.10 Level of Statistical Significance and Interpretation of Results

Statistical significance was assessed at the 5% significance level ($p < 0.05$). Regression coefficients, standard errors, confidence intervals and p-values were reported. For the first objective, the magnitude and direction of the mobile money adoption coefficient were used to explain its adjusted relationship with household consumption. For the second objective, the magnitude and statistical significance of the mobile money adoption × residence interaction term were used to determine whether the relationship differed between rural and urban households.

3.7 Data Presentation

The findings were presented using tables and narrative explanations. Tables were used to present descriptive statistics, distributions of mobile money usage, household characteristics and regression results. Regression results were presented in tables showing regression coefficients, standard errors, confidence intervals, significance levels and appropriate model-fit statistics.

3.8 Ethical Considerations

Although the study used secondary data and did not involve direct contact with human participants, ethical principles were observed throughout the research process.

First, the researcher appropriately acknowledged the Uganda Bureau of Statistics (UBOS) as the source of the UNHS 2023/24 data. All reports, publications and datasets used in the study were properly cited in accordance with the referencing requirements of the institution.

Second, the researcher used the data strictly for academic purposes and in accordance with any conditions attached to access and use of the UNHS microdata. The researcher did not attempt to identify individual respondents or households from the dataset.

Third, confidentiality and privacy were maintained throughout the study. Findings were presented in aggregate form, and no information that could reasonably identify individual respondents was disclosed.

Fourth, the researcher maintained academic integrity by accurately reporting the findings obtained from the statistical analysis. Data were not fabricated, falsified or manipulated to produce results consistent with the researcher's expectations.

Fifth, all secondary sources used in the study were properly acknowledged to avoid plagiarism. Ideas, findings, statistical information and theoretical arguments obtained from other researchers were appropriately cited.

Lastly, the researcher sought approval from the relevant academic institution before commencing the study and complied with the applicable ethical and data-use requirements governing secondary analysis of official survey data.

3.9 Limitations of the Study

The study had several limitations associated with the use of secondary cross-sectional data. First, the researcher had limited control over the original data collection and measurement processes. The measurement of mobile money usage and household consumption depended on the definitions, questions and procedures adopted during the UNHS 2023/24 data collection. This limitation was minimised by referring to the official survey questionnaire, metadata and technical documentation when defining and coding the study variables.

Second, the cross-sectional nature of the UNHS 2023/24 data limited the ability to establish definitive causal relationships between mobile money usage and household consumption. The findings therefore mainly demonstrated statistical associations rather than established that mobile money usage directly caused changes in household consumption.

Third, the study may have been affected by endogeneity and selection bias. Households that used mobile money may have differed systematically from non-users in terms of education, income, employment, wealth, location and access to technology, which may also have influenced household consumption. The study addressed observable differences by including relevant control variables in the regression models; however, the possibility of unobserved confounding factors could not be completely eliminated.

Fourth, the study was constrained by the availability and scope of variables in the UNHS 2023/24 dataset. Detailed information on aspects such as frequency of mobile money transactions, transaction values and duration of mobile money use may not have been sufficiently captured. In addition, quantitative secondary data may not have fully explained the behavioural motivations and experiences underlying mobile money use. Household consumption may also have varied with household size and composition; therefore, appropriate measures such as per-capita consumption were considered where supported by the available data.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

4.1. Introduction

This chapter presents the findings of the study on the effect of mobile money usage on household consumption in Uganda. The results are presented in line with the specific objectives of the study, beginning with the socio-demographic and economic characteristics of the households, followed by mobile money adoption and usage patterns. The chapter then presents the bivariate analysis of mobile money adoption and household consumption, followed by the multivariable regression results assessing the relationship between mobile money adoption and household consumption, as well as the moderating role of rural–urban residence. Diagnostic results for the regression models are also presented. The analysis follows the study framework, which identifies mobile money adoption as the main explanatory variable and household characteristics as control variables.

Table 2: Socio-demographic Characteristics of Households

Variable	**Category**	**Frequency (n)**	**Percent (%)**
Place of residence	Rural	1,002	63.58
	Urban	574	36.42
Sex of household head	Male	1,091	69.23
	Female	485	30.77
Geographical region	Central	349	22.14
	Eastern	423	26.84
	Northern	364	23.10
	Western	440	27.92
Education level of household head	Primary or less	807	61.37
	Secondary	362	27.53
	Certificate/Diploma	98	7.45
	Degree or higher	48	3.65
Employment status	Not employed/income-generating activity	597	43.61
	Employed/income-generating activity	772	56.39

The findings show that the majority of households were located in rural areas (63.58%), while 36.42% were urban. Most households were headed by males (69.23%), compared with 30.77% headed by females. By region, Western had the largest proportion of households (27.92%), followed by Eastern (26.84%), Northern (23.10%) and Central (22.14%). Regarding education, most household heads had primary education or less (61.37%), while only 3.65% had attained a degree or higher. In terms of employment, 56.39% of household heads were engaged in income-generating activities, whereas 43.61% were not. These characteristics provide the socio-demographic profile of the households included in the study and are relevant control factors in examining mobile money adoption and household consumption, as specified in the study methodology.

Table 3: Descriptive Statistics of Continuous Household Characteristics

Variable	**Observations (N)**	**Mean**	**Standard Deviation (SD)**	**Minimum**	**Maximum**
Age of household head (years)	1,576	43.53	16.10	17	100
Household size (members)	1,576	4.63	2.56	1	18
Total asset value (UGX)	1,576	30,800,000	110,000,000	0	2,960,000,000
Monthly household expenditure (UGX)	1,576	584,762.30	586,516.40	34,904.58	8,066,219
Monthly household food expenditure (UGX)	1,576	310,261.60	235,592.10	6,723.78	2,182,667
Annual per-capita household consumption (UGX)	1,576	1,852,667.12	1,777,685.88	111,877.86	17,755,348.00

The mean age of household heads was 43.53 years (SD = 16.10), with ages ranging from 17 to 100 years. Households had an average size of 4.63 members (SD = 2.56), ranging from one to 18 members. The average total asset value was approximately UGX 30.8 million, although the large standard deviation of UGX 110 million indicates substantial variation in household asset ownership. Mean monthly household expenditure was approximately UGX 584,762, while mean monthly food expenditure was about UGX 310,262. Mean annual per-capita household consumption, the outcome variable of the study, was approximately UGX 1,852,667 (SD = UGX 1,777,686). The wide ranges and relatively large standard deviations for asset value and expenditure indicate considerable differences in the economic circumstances of the households. These continuous characteristics are relevant to the study because household size and socioeconomic conditions are included as controls when examining the relationship between mobile money adoption and household consumption.

Table 4: Mobile Money Adoption and Usage Characteristics

Variable	**Category**	**Frequency (n)**	**Percent (%)**
Mobile money adoption	No active mobile money account	183	14.04
	Active mobile money account	1,120	85.96
Mobile money use in past 30 days	No	339	30.27
	Yes	781	69.73
Used mobile money to save, borrow or receive money	No	680	60.71
	Yes	440	39.29
Used mobile money to buy goods/services	No	847	75.63
	Yes	273	24.38

The results indicate that mobile money adoption was high among the households, with 85.96% having an active mobile money account compared with 14.04% without an active account. Among active users, 69.73% had used mobile money within the previous 30 days, showing that most account holders were recent users. However, fewer users reported using mobile money to save, borrow or receive money (39.29%), while 24.38% used it to purchase goods or services. The

findings therefore show that mobile money was widely adopted and recently used, although its use for broader financial activities and purchasing goods or services was less common. This supports the study's focus on mobile money adoption as the main independent variable, with saving, borrowing, receiving money and purchasing activities serving as supporting indicators of usage. Mobile money status was recorded for 1,303 of the 1,576 household heads. The remaining 273 heads neither owned nor used a mobile phone and were therefore not asked about mobile money, so they were excluded from the analyses that involve mobile money adoption.

4.2. Mobile Money Adoption and Household Consumption in Uganda

4.2.1 Bivariate Analysis

Before the multivariable regression model was estimated, bivariate analysis was conducted to examine the unadjusted relationships between mobile money adoption, household characteristics and household consumption, as specified in Section 3.6.3. The analysis used annual per-capita household consumption, the outcome measure used in the regression models. Because mobile money status was recorded for 1,303 of the 1,576 household heads, analyses involving mobile money adoption were based on these 1,303 households. Table 5 compares household consumption between adopters and non-adopters.

Table 5: Annual Per-Capita Household Consumption by Mobile Money Adoption Status (UGX)

Group	**N**	**Mean**	**SD**	**Minimum**	**Maximum**	**t**	**p-value**
Active mobile money account	1,120	2,089,795	1,967,659	216,666	17,755,348		
No active mobile money account	183	1,367,491	955,014	243,111	6,308,148		
Difference in means (adopters − non-adopters)		**722,304**				**7.86**	**<0.001**

Note: The difference in means was tested using an independent-samples t-test with unequal variances. The result was the same when the test was repeated on log-transformed consumption ($t = 6.51$, $p < 0.001$).

Table 5 shows that households with an active mobile money account had a mean annual per-capita consumption of UGX 2,089,795, compared with UGX 1,367,491 for households without an active account. The difference of UGX 722,304 was statistically significant ($t = 7.86$, $p < 0.001$). This

unadjusted result indicates that mobile money adopters had higher consumption than non-adopters. However, it does not show that mobile money adoption caused the difference, because adopters and non-adopters may also differ in education, employment, wealth and location. These characteristics were therefore examined next.

Table 6 presents household consumption by household characteristics.

Table 6: Annual Per-Capita Household Consumption by Household Characteristics (UGX)

Characteristic	**N**	**Mean**	**SD**	**Minimum**	**Maximum**	**Test statistic**	**p-value**
Sex of household head						**t = −0.18**	**0.860**
Male	1,091	1,847,324	1,754,279	111,878	16,132,437		
Female	485	1,864,687	1,831,030	115,945	17,755,348		
Education level						**F = 67.76**	**<0.001**
Primary or less	807	1,572,127	1,303,850	226,920	9,151,368		
Secondary	362	2,189,716	1,886,407	335,388	13,510,268		
Certificate/Diploma	98	2,668,456	1,946,757	392,432	11,865,063		
Degree or higher	48	4,896,258	4,296,900	635,698	17,755,348		
Employment status						**t = 8.85**	**<0.001**
Employed	772	2,167,519	2,061,049	111,878	16,132,437		
Not employed	597	1,394,931	1,122,881	115,945	10,564,754		
Place of residence						**t = −9.68**	**<0.001**
Rural	1,002	1,488,261	1,277,161	111,878	12,874,752		
Urban	574	2,488,790	2,280,184	166,508	17,755,348		
Region						**F = 65.18**	**<0.001**

Characteristic	N	Mean	SD	Minimum	Maximum	Test statistic	p-value
Central	349	2,869,913	2,453,698	357,047	17,755,348		
Eastern	423	1,520,572	1,520,171	226,920	16,125,112		
Northern	364	1,227,132	908,923	111,878	7,375,038		
Western	440	1,882,558	1,551,227	264,841	11,865,063		

Note: Tests: independent-samples t-test with unequal variances for two categories (first category minus second) and one-way ANOVA (F) for more than two categories. Sample sizes differ because household characteristics were not recorded for all household heads. The conclusions were unchanged when the tests were repeated on log-transformed consumption.

Consumption did not differ significantly by sex of the household head ($t = -0.18$, $p = 0.860$). All other characteristics were significantly associated with consumption ($p < 0.001$). Mean consumption rose with the level of education, from UGX 1,572,127 among household heads with primary education or less to UGX 4,896,258 among those with a degree or higher. Households headed by employed persons consumed more (UGX 2,167,519) than those headed by persons without income-generating activity (UGX 1,394,931), and urban households consumed more (UGX 2,488,790) than rural households (UGX 1,488,261). By region, mean consumption was highest in Central (UGX 2,869,913) and lowest in Northern Uganda (UGX 1,227,132).

Table 7 examines the continuous household characteristics, first in relation to consumption and then in relation to mobile money adoption.

Table 7: Continuous Household Characteristics, Household Consumption and Mobile Money Adoption

Characteristic	N	r (log consumption)	p-value	Mean: adopters	Mean: non-adopters	t	p-value
Age of household head (years)	1,576	−0.030	0.236	41.26	43.94	−2.08	0.039
Household size (members)	1,576	−0.425	<0.001	4.70	4.59	0.58	0.559
Household wealth (log total asset value)	1,576	0.111	<0.001	15.90	15.11	3.33	0.001

Note: r is the Pearson correlation coefficient between the characteristic and log annual per-capita household consumption (all 1,576 household heads). The comparison of means between adopters (n = 1,120) and non-adopters (n = 183) used an independent-samples t-test with unequal variances.

Household size was strongly and negatively correlated with consumption ($r = -0.425$, $p < 0.001$), meaning that larger households had lower consumption per person, while household wealth was positively correlated with consumption ($r = 0.111$, $p < 0.001$). Age was not significantly correlated with consumption ($r = -0.030$, $p = 0.236$). Mobile money adopters had significantly higher household wealth ($p = 0.001$) and were slightly younger ($p = 0.039$) than non-adopters, whereas household size did not differ between the two groups ($p = 0.559$).

Table 8 shows how mobile money adoption varied across the categorical household characteristics.

Table 8: Mobile Money Adoption by Household Characteristics

Characteristic	**N**	**Adopters (n)**	**Adopters (%)**	**Chi-square**	**p-value**
Sex of household head				**$\chi^2 = 3.91$ (df = 1)**	**0.048**
Male	934	814	87.15		
Female	369	306	82.93		
Education level				**$\chi^2 = 12.20$ (df = 3)**	**0.007**
Primary or less	656	560	85.37		
Secondary	344	310	90.12		
Certificate/Diploma	96	89	92.71		
Degree or higher	48	47	97.92		
Employment status				**$\chi^2 = 23.99$ (df = 1)**	**<0.001**
Employed	682	613	89.88		
Not employed	437	347	79.41		
Place of residence				**$\chi^2 = 6.74$ (df = 1)**	**0.009**
Rural	791	664	83.94		
Urban	512	456	89.06		
Region				**$\chi^2 = 18.01$ (df = 3)**	**<0.001**
Central	323	296	91.64		
Eastern	344	297	86.34		
Northern	263	209	79.47		
Western	373	318	85.25		

Note: Chi-square tests of association between mobile money adoption and each characteristic. Percentages are row percentages.

Mobile money adoption was significantly associated with every characteristic examined. Adoption increased with education, from 85.37% among household heads with primary education or less to 97.92% among those with a degree or higher. It was higher among employed household heads (89.88%) than among those without income-generating activity (79.41%), higher in urban (89.06%) than in rural households (83.94%), and highest in the Central region (91.64%) and lowest in the Northern region (79.47%). Adoption was marginally higher among male-headed households (87.15%) than female-headed households (82.93%), a difference that was only just significant at the 5% level ($p = 0.048$).

The bivariate results show that mobile money adopters had significantly higher consumption than non-adopters, and that education, employment, place of residence, region, household size and household wealth were related to consumption and, in most cases, to adoption as well. Because the same characteristics are associated with both adoption and consumption, the unadjusted difference in Table 5 may partly reflect differences in household composition rather than an effect of mobile money. All of these characteristics, together with age and sex of the household head, which are theoretically relevant controls, were therefore included in the multivariable regression model, which estimates the association between mobile money adoption and consumption while holding them constant.

4.2.2 Multivariable Regression Analysis

Table 9: Multivariable Linear Regression of Mobile Money Adoption on Household Consumption

Dependent variable: Log annual per-capita household consumption

Variable	Category	Coefficient (β)	Std. Error	T	p-value	95% CI
Mobile money adoption	No active mobile money account (Ref.)					
	Active mobile money account	0.121	0.060	2.02	**0.044**	0.003–0.238
Age of household head	Per additional year	0.004	0.002	2.09	**0.037**	0.0002–0.007
Sex of household head	Male (Ref.)					
	Female	0.003	0.048	0.07	0.944	−0.090–0.097
Education level	Primary or less (Ref.)					
	Secondary	0.152	0.047	3.24	**0.001**	0.060–0.245
	Certificate/Diploma	0.297	0.086	3.46	**0.001**	0.128–0.465
	Degree or higher	0.490	0.153	3.20	**0.001**	0.190–0.791
Household size	Per additional member	−0.141	0.010	−14.49	**<0.001**	−0.160–−0.122
Employment status	Not employed (Ref.)					
	Employed/income-generating activity	0.162	0.048	3.39	**0.001**	0.068–0.256
Household wealth	Log total asset value	0.061	0.012	5.28	**<0.001**	0.039–0.084
Place of residence	Rural (Ref.)					
	Urban	0.218	0.050	4.40	**<0.001**	0.121–0.315

Region	Central (Ref.)					
	Eastern	−0.413	0.065	−6.32	**<0.001**	−0.542–−0.285
	Northern	−0.460	0.063	−7.27	**<0.001**	−0.585–−0.336
	Western	−0.216	0.062	−3.47	**0.001**	−0.338–−0.094
Constant		13.675	0.200	68.21	**<0.001**	13.281–14.068

Having examined the unadjusted relationships, the multivariable model in Table 9 assessed whether mobile money adoption remained associated with household consumption after adjustment for household characteristics. The model was estimated on 990 households with complete information on all variables included. The results show that, after controlling for age, sex, education, household size, employment, household wealth, place of residence and region, households with an active mobile money account had significantly higher log annual per-capita household consumption than households without an active account ($\beta = 0.121$, $p = 0.044$). The coefficient corresponds to approximately 12.8% higher household consumption among households with an active mobile money account. Age, education, employment, household wealth and urban residence were also positively and significantly associated with household consumption, while household size was negatively associated with consumption. Sex of the household head was not statistically significant. Compared with households in Central Uganda, households in Eastern, Northern and Western regions had significantly lower consumption levels. Overall, the model was statistically significant and explained 46.51% of the variation in log annual per-capita household consumption. The finding for mobile money should be interpreted as an adjusted statistical association given the cross-sectional study design. This analysis directly addresses the study's first objective of examining the relationship between mobile money adoption and household consumption.

4.3. Rural–Urban Differences in the Impact of Mobile Money on Household Consumption

To address the second objective, household consumption was first compared between mobile money adopters and non-adopters separately for rural and urban households, as shown in Table 10. This comparison is bivariate and does not adjust for other household characteristics.

Table 10: Annual Per-Capita Household Consumption by Mobile Money Adoption Status and Place of Residence (UGX)

Residence and group	N	Mean	SD	Minimum	Maximum	t	p-value
Rural							
Active mobile money account	664	1,645,502	1,407,889	246,805	12,874,752		
No active mobile money account	127	1,242,814	798,412	244,505	4,713,081		
Difference in means		402,689				4.50	<0.001
Urban							
Active mobile money account	456	2,736,747	2,434,332	216,666	17,755,348		
No active mobile money account	56	1,650,240	1,200,166	243,111	6,308,148		
Difference in means		1,086,507				5.52	<0.001

Note: Differences in means (adopters − non-adopters) were tested using independent-samples t-tests with unequal variances. The conclusions were unchanged when the tests were repeated on log-transformed consumption.

In both rural and urban households, adopters had significantly higher consumption than non-adopters. In rural households the difference was UGX 402,689 ($t = 4.50$, $p < 0.001$), while in urban households it was UGX 1,086,507 ($t = 5.52$, $p < 0.001$). The difference was larger in absolute terms in urban households, partly because urban households consume more overall. Whether the relationship between mobile money adoption and consumption differs significantly between rural and urban households, after adjustment for other household characteristics, was tested formally using the interaction model in Table 11.

Table 11: Moderating Effect of Place of Residence on the Relationship between Mobile Money Adoption and Household Consumption

Dependent variable: Log annual per-capita household consumption

Variable	Category	Coefficient (β)	Robust SE	T	p-value	95% CI
Mobile money adoption	No active mobile money account (Ref.)					
	Active mobile money account	0.128	0.069	1.85	0.064	−0.008–0.263
Place of residence	Rural (Ref.)					
	Urban	0.237	0.125	1.89	0.059	−0.009–0.483
Mobile money adoption × residence	Active account × Urban	−0.022	0.133	−0.16	0.871	−0.282–0.239
Age of household head	Per additional year	0.004	0.002	2.08	**0.038**	0.0002–0.007
Sex of household head	Male (Ref.)					
	Female	0.003	0.048	0.07	0.945	−0.091–0.097
Education level	Primary or less (Ref.)					
	Secondary	0.152	0.047	3.24	**0.001**	0.060–0.245
	Certificate/Diploma	0.297	0.086	3.46	**0.001**	0.129–0.466
	Degree or higher	0.491	0.153	3.20	**0.001**	0.190–0.791
Household size	Per additional member	−0.141	0.010	−14.48	**<0.001**	−0.160–−0.122
Employment status	Not employed (Ref.)					
	Employed/income-generating activity	0.162	0.048	3.38	**0.001**	0.068–0.256

Household wealth	Log total asset value	0.062	0.011	5.38	**<0.001**	0.039–0.084
Region	Central (Ref.)					
	Eastern	−0.414	0.066	−6.31	**<0.001**	−0.542–−0.285
	Northern	−0.461	0.064	−7.22	**<0.001**	−0.587–−0.336
	Western	−0.217	0.062	−3.47	**0.001**	−0.339–−0.094
Constant		13.667	0.195	70.08	**<0.001**	13.284–14.049

The interaction between mobile money adoption and place of residence was not statistically significant (β = −0.022, p = 0.871), indicating that the association between mobile money adoption and household consumption did not differ significantly between rural and urban households in this sample. The estimated association was 0.128 among rural households (p = 0.064) and 0.106 among urban households (p = 0.348). After adjustment for the other household characteristics, age, higher education, employment and household wealth were positively associated with consumption, while household size was negatively associated with consumption. The overall model was statistically significant (F = 40.84, p < 0.001) and explained 46.51% of the variation in log annual per-capita household consumption. This analysis directly addresses the study's second objective by testing whether rural–urban residence modifies the relationship between mobile money adoption and household consumption.

Table 12: Marginal Effects of Mobile Money Adoption by Residence

Place of residence	**Effect of mobile money adoption (β)**	**Robust SE**	**t**	**p-value**	**95% CI**
Rural	0.128	0.069	1.85	0.064	−0.008–0.263
Urban	0.106	0.113	0.94	0.348	−0.116–0.329

The mean VIF was 2.60, suggesting no serious overall multicollinearity. The VIFs for urban residence (9.83) and the interaction term (10.61) are elevated because interaction models naturally create correlation between the main-effect and interaction terms. The Breusch–Pagan/Cook–

Weisberg heteroskedasticity test was not applicable with the probability weights used; therefore, the reported robust standard errors are appropriate for the fitted model.

4.4 Discussion of Findings

This section discusses the findings of the study in relation to the study objectives by comparing the empirical results with the literature reviewed in Chapter Two and interpreting them in light of the theoretical perspectives underpinning the study. The discussion focuses on the relationship between mobile money adoption and household consumption and whether this relationship differs between rural and urban households in Uganda. The findings are interpreted mainly through the Financial Inclusion Theory and the Consumption-Smoothing Perspective, which provide explanations for how mobile money can improve access to financial services, facilitate the transfer and management of financial resources, and help households maintain consumption in the face of income fluctuations and economic shocks.

Mobile Money Adoption and Household Consumption in Uganda

The study established that mobile money adoption was positively and statistically significantly associated with household consumption in Uganda. Specifically, households with an active mobile money account recorded a coefficient of $\beta = 0.121$ ($p = 0.044$) compared with households without an active account. Based on the interpretation presented in Chapter Four, this corresponds to approximately 12.8% higher log annual per-capita household consumption among households with an active mobile money account, after controlling for age, sex, education, household size, employment status, household wealth, place of residence and geographical region. The finding indicates that mobile money adoption is associated with improved household consumption even after accounting for important socioeconomic and demographic characteristics.

The finding is consistent with the earlier Ugandan evidence reviewed in Chapter Two. Munyegera and Matsumoto (2016), using panel data from 846 rural Ugandan households, found that access to mobile money significantly increased real per-capita household consumption. They attributed part of this relationship to the increased frequency and value of remittances received through mobile money. The current study therefore corroborates the earlier Ugandan evidence, while extending it to a more recent and nationally representative household dataset. Whereas Munyegera and Matsumoto focused exclusively on rural households, the present study considers households across Uganda and controls for rural–urban residence, education, wealth, employment and other

household characteristics. This broader coverage provides evidence that the positive relationship between mobile money adoption and consumption is not restricted to rural households.

The finding is also consistent with Simione and Muehlschlegel (2023), who found that mobile-money users in Uganda were more likely than non-users to receive and send remittances and were also slightly more likely to save and borrow. These financial activities provide mechanisms through which mobile money can influence household welfare by improving the ability of households to access, transfer and manage financial resources. Similarly, Tabetando et al. (2022) found that mobile-money adoption among rural Ugandan households increased per-capita farm income by 13% and encouraged agricultural investment through increased use of chemical fertiliser and high-yielding maize seeds. These findings suggest that the positive association observed in the present study may reflect several interconnected pathways, including remittances, agricultural income generation, saving, borrowing and improved management of household financial resources.

The result is further supported by Apeti (2023), who examined 76 developing countries and found that mobile-money adoption increased household consumption while reducing consumption volatility. The study identified financial inclusion and migrant remittances as important mechanisms linking mobile money with consumption outcomes. The consistency between the present Ugandan finding and this broader developing-country evidence strengthens the argument that mobile money can contribute to household welfare by reducing barriers to financial transactions and improving households' capacity to access and manage financial resources.

The finding also provides empirical support for the Financial Inclusion Theory. The theory proposes that access to and use of appropriate financial services enables individuals and households to participate more effectively in economic activities. Mobile money can promote financial inclusion by allowing households to send and receive money, save and access financial resources without depending entirely on conventional banking institutions. In the present study, the high level of mobile money adoption provides evidence that mobile financial services have become an important component of household financial behaviour in Uganda. The descriptive findings show that 85.96% of households had an active mobile money account, while 69.73% of active account holders had used mobile money within the previous 30 days. However, only 39.29% reported using mobile money for saving, borrowing or receiving money, and 24.38% reported

using it to purchase goods or services. This pattern suggests that although adoption is widespread, the intensity and diversity of financial activities undertaken through mobile money remain uneven.

The positive association between adoption and consumption can also be interpreted through the Consumption-Smoothing Perspective. This perspective argues that households seek to maintain relatively stable consumption despite temporary fluctuations in income and unexpected financial shocks. Mobile money may facilitate this process by allowing households to receive transfers quickly, access savings and obtain financial support when income is temporarily insufficient. The observed higher consumption among mobile-money-adopting households is therefore consistent with the possibility that mobile money provides households with additional mechanisms for meeting expenditure needs and managing temporary financial constraints. However, because the present study does not directly measure consumption volatility or observe households over time, the consumption-smoothing mechanism cannot be established directly from the results. Rather, the finding is consistent with the theoretical mechanism proposed by the perspective.

The finding also agrees with international evidence from China. Hu and Hou (2024) found that mobile-payment use increased household consumption and that digital inclusive finance provided an additional pathway through which mobile payments influenced consumption. Similarly, Gopalakrishna and Ravi (2026) found that mobile-payment adoption significantly increased expenditure on consumer goods and cultural and leisure activities. Although these studies were conducted in a substantially different economic and technological context from Uganda, their findings provide further evidence that digital financial-service adoption can be associated with changes in household expenditure.

Nevertheless, the magnitude of the association in the present study should be interpreted cautiously. Unlike studies using panel data, instrumental variables or propensity-score methods, the present study uses cross-sectional data. The methodology therefore recognises the possibility of selection bias and unobserved confounding because households that adopt mobile money may systematically differ from non-adopters in education, wealth, employment, location and other characteristics that also influence consumption. Consequently, the finding demonstrates a statistically significant positive association rather than proving that mobile money adoption itself causes a 12.8% increase in household consumption. Even so, the consistency of the finding with

previous Ugandan and international evidence suggests that mobile money remains an important component of the relationship between digital financial inclusion and household welfare.

Rural–Urban Differences in the Relationship between Mobile Money Adoption and Household Consumption

The second objective examined whether the relationship between mobile money adoption and household consumption differs between rural and urban households. The results indicate that the interaction between mobile money adoption and place of residence was not statistically significant ($\beta = -0.022$, $p = 0.871$). This means that there was no statistically significant evidence that the association between mobile money adoption and household consumption differed between rural and urban households in the study population. The estimated association was 0.128 among rural households ($p = 0.064$) and 0.106 among urban households ($p = 0.348$). Thus, although the estimated coefficient was slightly larger for rural households, the difference between the two groups was not statistically significant.

This finding partly contrasts with the literature reviewed in Chapter Two, which suggests that the effects of mobile money may vary according to geographical and socioeconomic conditions. Simione and Muehlschlegel (2023), for example, reported considerably higher mobile-money participation among urban respondents than rural respondents in Uganda, with usage rates of 73.4% and 46.8%, respectively. However, differences in adoption rates do not necessarily imply differences in the welfare effects of adoption. The present study makes this distinction important: while rural and urban households may differ in the likelihood of using mobile money, the results do not provide evidence that the consumption association among users differs significantly by residence.

The finding also differs from the evidence of Munyegera and Matsumoto (2016), whose study of rural Ugandan households found a positive and significant relationship between mobile-money access and real per-capita household consumption. However, because that study focused only on rural households, it could not establish whether the effect was statistically different from the effect among urban households. The present study therefore provides an important extension by directly testing rural–urban heterogeneity using an interaction term. The absence of a significant interaction suggests that the positive relationship observed in the overall sample may operate across both rural and urban settings rather than being uniquely concentrated in one location.

The finding also contrasts with studies from other developing contexts that have reported location-specific effects. Zhang et al. (2022), for example, found that mobile payments significantly increased rural household consumption in China, with stronger effects among financially excluded households and those in less-developed areas. Hu and Hou (2024) similarly found differences in the consumption effects of mobile payments across regions and income groups. Apeti (2023) also reported that the effects of mobile money on consumption volatility varied according to structural characteristics, including the proportion of the population living in rural areas and the level of economic development.

One possible explanation for the Ugandan finding is the increasing diffusion of mobile money services across both rural and urban areas. Mobile money agents and mobile telecommunications networks have expanded beyond major urban centres, potentially reducing some of the geographical barriers that previously distinguished rural and urban financial access. As a result, once households have adopted mobile money, the service may provide broadly similar opportunities for transferring and managing financial resources regardless of residence. This interpretation is consistent with the Financial Inclusion Theory, which emphasises the capacity of mobile financial services to reduce geographical barriers to financial-service access.

The finding can also be interpreted through the Consumption-Smoothing Perspective. Households in both rural and urban areas may face temporary income shortages, unexpected expenditures and financial shocks, although the nature and magnitude of these shocks may differ. Mobile money provides a mechanism through which households in either setting can receive transfers, access financial support and manage available resources.

Another possible explanation is that differences in the effectiveness of mobile money may be more strongly determined by household-level socioeconomic characteristics than by residence alone. The regression results show that education, employment and household wealth were positively associated with consumption, while household size was negatively associated with consumption. Urban residence itself was positively associated with consumption in the main model, but the interaction analysis did not demonstrate that residence significantly changed the mobile-money–consumption relationship. This suggests that differences in household resources and capabilities may be more important for household consumption than the rural–urban classification itself.

The non-significant interaction should, however, not be interpreted as evidence that rural and urban households are identical in their use of mobile money. The descriptive literature reviewed in Chapter Two demonstrates that substantial rural–urban differences exist in mobile-money participation, digital literacy, access to financial infrastructure and socioeconomic opportunities. Okello Candiya Bongomin et al. (2024), for instance, found that digital literacy strengthened the relationship between financial technologies and digital financial inclusion among vulnerable populations in rural Uganda.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusions and recommendations of the study on the effect of mobile money usage on household consumption in Uganda. The findings were based on analysis of data from the 2023/24 Uganda National Household Survey (UNHS) using descriptive statistics and survey-weighted regression analysis. The conclusions and recommendations presented in this chapter are derived directly from the empirical findings presented and discussed in Chapter Four. They are intended to provide useful information for policymakers, financial service providers, development practitioners and other stakeholders seeking to strengthen the contribution of mobile money to household welfare and financial inclusion in Uganda.

5.2 Summary of Findings

5.2.1 Mobile Money Adoption and Household Consumption in Uganda

The first objective examined the effect of mobile money adoption on household consumption in Uganda. The findings revealed a positive and statistically significant association between mobile money adoption and household consumption. Households with an active mobile money account had a coefficient of 0.121 and a p-value of 0.044, implying approximately 12.8% higher annual per-capita household consumption compared with households without an active account, holding other factors constant.

The finding is consistent with Munyegera and Matsumoto (2016), who found that mobile money access significantly increased real per-capita household consumption among rural Ugandan households, partly through remittances. Similarly, Apeti (2023) found that mobile money adoption increased household consumption and reduced consumption volatility across developing countries. Hu and Hou (2024) and Gopalakrishna and Ravi (2026) also reported positive relationships between mobile payment adoption and household consumption.

The finding is also consistent with the Financial Inclusion Theory because mobile money improves households' access to financial services such as transfers, savings and borrowing. Simione and

Muehlschlegel (2023) found that mobile money users in Uganda were more likely to send and receive remittances and were slightly more likely to save and borrow. It is also consistent with the Consumption-Smoothing Perspective, since mobile money can help households manage temporary income shortages and unexpected expenditures through transfers, savings and financial support.

However, the finding represents an association rather than definitive evidence of causality because the study used cross-sectional data.

5.2.2 Rural–Urban Differences in the Relationship between Mobile Money Adoption and Household Consumption

The second objective assessed whether the relationship between mobile money adoption and household consumption differs between rural and urban households. The interaction between mobile money adoption and urban residence was not statistically significant ($\beta = -0.022$, $p = 0.871$). Therefore, there was no statistical evidence that residence significantly moderated the relationship between mobile money adoption and household consumption.

Although the estimated association was positive for both rural and urban households, the separate marginal effects were not statistically significant at the 5% level. This finding differs from Simione and Muehlschlegel (2023), who found substantial rural–urban differences in mobile money use in Uganda, with usage higher among urban respondents. It also differs from Zhang et al. (2022), Hu and Hou (2024), and Apeti (2023), who reported differences in mobile payment or mobile money effects across regions and levels of development.

The absence of a significant rural–urban difference in the present study may partly reflect the widespread availability of mobile money across Uganda. Okello Candiya Bongomin et al. (2024) also found that mobile money contributed positively to digital financial inclusion among vulnerable rural populations. This suggests that once households gain access to mobile money, its relationship with consumption may not depend strongly on whether the household is rural or urban.

5.3 Conclusions

The study concludes that mobile money adoption is positively associated with household consumption in Uganda. Households with active mobile money accounts recorded higher annual per-capita consumption than households without active accounts. This finding agrees with

Munyegera and Matsumoto (2016) and Apeti (2023), who similarly found positive relationships between mobile money adoption and household consumption.

The study further concludes that mobile money may contribute to household financial welfare by improving access to transfers, savings and borrowing opportunities. This interpretation is supported by Simione and Muehlschlegel (2023), who found that mobile money users in Uganda were more likely to participate in remittance transfers and were slightly more likely to save and borrow.

The study also concludes that there is no statistically significant rural–urban difference in the relationship between mobile money adoption and household consumption. Although rural and urban households may differ in their level of mobile money use, the interaction analysis indicates that residence does not significantly alter the relationship between mobile money adoption and consumption.

Overall, mobile money represents an important component of financial inclusion and household financial management in Uganda. However, the findings should be interpreted as associations rather than causal effects because of the cross-sectional nature of the data.

5.4 Recommendations

Government of Uganda: The Government should strengthen policies that promote affordable and accessible digital financial services. Mobile money should also be integrated into broader financial inclusion, poverty reduction and social protection programmes to enable households to access and manage financial resources more effectively.

Bank of Uganda: The Bank of Uganda should strengthen regulation and consumer protection within the mobile money sector, particularly regarding transaction charges, fraud prevention, transparency and complaint resolution. Financial literacy programmes should also be expanded to promote responsible and productive use of mobile money.

Mobile Network Operators and Financial Service Providers: Mobile money providers should develop affordable and user-friendly products that encourage households to use mobile money for saving, payments, remittances and other legitimate financial activities. This is important because, despite high account ownership, only 39.29% of households used mobile money for saving, borrowing or receiving money and 24.38% used it for purchasing goods and services.

Uganda Communications Commission and Local Governments: UCC, together with local governments, should support improved network coverage and reliability, particularly in underserved communities. Community-level digital and financial literacy programmes should also be promoted to ensure that households can use mobile money safely and effectively.

Researchers and Future Studies: Future studies should use longitudinal or panel data to establish the causal relationship between mobile money adoption and household consumption. Further research should also examine transaction frequency, transaction values and specific pathways such as remittances, savings, borrowing and business income through which mobile money may influence household consumption. Munyegera and Matsumoto (2016) identified remittances as an important pathway linking mobile money access to household consumption, while Tabetando et al. (2022) found that mobile money adoption was associated with increased farm income and agricultural input use among rural Ugandan households.

REFERENCES:

Abiona, O., & Koppensteiner, M. F. (2022). Financial inclusion, shocks, and poverty: Evidence from the expansion of mobile money in Tanzania. Journal of Human Resources, 57(2), 435–464.

Apeti, A. E. (2023). Household welfare in the digital age: Assessing the effect of mobile money on household consumption volatility in developing countries. World Development, 161, 106110. https://doi.org/10.1016/j.worlddev.2022.106110

Atta-Aidoo, J., Bizoza, S., Matthew, E. C., & Saleh, A. O. (2024). Mobile money, food security and coping strategies in a post-conflict and fragile context: Evidence from Burundi. Journal of Economics and Development, 26(4), 306–328. https://doi.org/10.1108/JED-10-2023-0185

Deaton, A., & Alhabeeb, M. (1992). Understanding consumption. Clarendon Press Oxford.

Diallo, T. (2025). Mobile money and household resilience to food insecurity in Rural Mali: The role of livelihood strategies and digital transfers. Journal of the Saudi Society of Agricultural Sciences, 24(4), 26. https://doi.org/10.1007/s44447-025-00034-7

Dunne, J. P., & Kasekende, E. (2017). Mobile money and household consumption patterns in Uganda.

Gopalakrishna, K., & Ravi, J. (2026). Mobile Money Adoption and Financial Inclusion: A Cross-Country Assessment. Scriptora International Journal of Research and Innovation (SIJRI), 9–17.

GSMA. (2024). State of the industry report on mobile money 2024. GSMA. https://www.gsma.com/mobilefordevelopment/resources/state-of-the-industry-report-on-mobile-money-2024/

GSMA. (2025). The state of the industry report on mobile money 2025. GSMA. https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/gsma_resources/the-state-of-the-industry-report-on-mobile-money-2025/

Hu, N., & Hou, G. (2024). Mobile payment, digital inclusive finance, and residents' consumption behavior research. PLOS ONE, 19(7), e0288679.

ttps://doi.org/10.1371/journal.pone.0288679

International Monetary Fund. (2024). Uganda: Fifth review under the extended credit facility arrangement and request for modification of performance criteria—Press release; staff report; and statement by the Executive Director for Uganda (IMF Country Report No. 24/77). https://www.imf.org/en/publications/cr/issues/2024/03/18/uganda-fifth-review-under-the-extended-credit-facility-arrangement-and-request-for-546611

Mundonde, J., & Makoni, P. L. (2026). Mobile Money Adoption and Bank Credit Growth: Evidence from Sub-Saharan Africa. Economies, 14(7), 256.

Munyegera, G. K., & Matsumoto, T. (2016). Mobile money, remittances, and household welfare: Panel evidence from rural Uganda. World Development, 79, 127–137.

Okello Candiya Bongomin, G., Akol Malinga, C., Manzi Amani, A., & Balinda, R. (2024). Recalibrating the scope of financial inclusion through financial technologies in the digital age: The role of digital literacy as a moderator in rural Uganda. Information Technology & People. https://doi.org/10.1108/ITP-09-2022-0732

Simione, F. F., & Muehlschlegel, T. S. (2023). Mobile money, perception about cash, and financial inclusion: Learning from Uganda's micro-level data. International Monetary Fund.

Spadavecchia, L., Mugume, A., & Apaa, J. (2025). Mobile Money Tax: Financial Inclusion Versus Financial Development. International Growth Center.

Tabetando, R., Matsumoto, T., & Fani, D. C. R. (2022). Mobile money, agricultural intensification, and household welfare: Panel evidence from rural Uganda. Journal of Agricultural and Applied Economics, 54(3), 515–530.

UBOS. (2025). Uganda National Household Survey 2023/24. UBOS. https://www.ubos.org/2025/07/05/uganda-national-household-survey-report-2023-2024-released/

World Bank. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank.

ttps://documents.worldbank.org/en/publication/documents-reports/documentdetail/099818107072234182

World Bank. (2025). The Global Findex Database 2025: Connectivity and financial inclusion in the digital economy. World Bank.

https://openknowledge.worldbank.org/entities/publication/8b9002b6-d8dd-426c-aa7c-6d7d16902cd7

Yao, B., Shanoyan, A., Schwab, B., & Amanor-Boadu, V. (2023). The role of mobile money in household resilience: Evidence from Kenya. World Development, 165, 106198.

Zhang, J., Zhang, H., & Gong, X. (2022). Mobile payment and rural household consumption: Evidence from China. Telecommunications Policy, 46(3), 102276. https://doi.org/10.1016/j.telpol.2021.102276