

Assessing the Impact of Mobile Money Services on Financial Inclusion Among Rural Communities of Chibombo District, Zambia

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Article Info

Volume 7, Issue 5

Publication history:

Accepted on 30 June 2026;
Published: 1 September 2026

Key Words:

Mobile Money, Financial Inclusion, Rural Communities, Digital Finance, Zambia

Article Doi:

10.59413/ajocs/v7.i5.5

Abstract

Financial inclusion remains central to poverty reduction and inclusive economic growth, yet rural communities across Sub-Saharan Africa continue to lag behind urban areas in access to formal financial services. This study assessed the impact of mobile money services on financial inclusion among rural communities of Chibombo District, Zambia. Anchored on the Technology Acceptance Model and the Financial Inclusion Framework, the study examined adoption patterns, the contribution of mobile money to access, savings and remittances, and the barriers limiting its effectiveness. A descriptive research design employing a quantitative approach was adopted. Data were collected from ten respondents, comprising households, mobile money agents and financial institution staff drawn from Chiyuni, Mwacisompola, Muchenje and Chilochabalinge, against a target of fifteen key informants, yielding a response rate of 67%. Data were analysed descriptively using frequencies and percentages. The findings showed that 90% of respondents actively used mobile money services, predominantly for sending and receiving money, and that 80% reported improved access to financial services while 90% reported a reduction in the distance travelled to reach a financial service point. Mobile money was also found to have strengthened savings behaviour, with 70% of respondents reporting improved savings. Despite these gains, poor network connectivity, high transaction charges, fraud and security concerns, and limited ownership of mobile phones were identified as the principal barriers to effective usage. The study concludes that mobile money services play a critical role in extending financial inclusion to underserved rural populations, but that infrastructural and operational constraints continue to blunt its full impact. It recommends investment in network infrastructure, review of transaction charges, expansion of financial literacy programmes, strengthened security measures, and improved access to mobile devices in rural areas.

1. Introduction

Financial inclusion is widely regarded as a cornerstone of economic development, poverty reduction and household empowerment in developing economies. It refers to the access individuals and businesses have to useful and affordable financial products and services, including transactions, payments, savings, credit and insurance, delivered responsibly and sustainably (World Bank, 2021). Across Sub-Saharan Africa, where more than 60% of the adult population remains unbanked, mobile money has emerged as a transformative tool for closing the financial access gap, particularly in rural areas where conventional banking infrastructure is thin on the ground (GSMA, 2023).

Zambia has followed this regional trajectory. Since the introduction of MTN MoMo in 2009, Airtel Money in 2011 and Zamtel Kwacha in 2017, mobile money uptake has grown rapidly; the Bank of Zambia (2022) recorded an 85% increase in transaction volumes between 2019 and 2022 and more than 18 million registered accounts by 2023. The FinScope Zambia Survey (2020) attributes much of the national rise in financial inclusion, from 59.3% in 2015 to 69.4% in 2020, to mobile money. Growth has continued through 2023 and 2024, with the value of mobile money transactions climbing from roughly K296 billion in 2022 to about K452 billion in 2023 (Bank of Zambia, 2023; ZICTA, 2024).

This national progress, however, conceals a persistent urban-rural divide. Rural financial inclusion stood at 50.2% against 84.8% in urban areas as at 2020, a gap of 34.6 percentage points (FinScope, 2020). Chibombo District in Central Province illustrates this disparity clearly. With a population of approximately 421,315 and a poverty rate of 49.42% (Zambia Statistics Agency, 2022), the district is served by only one commercial bank branch and a handful of microfinance institutions, leaving most rural households dependent on informal mechanisms such as village savings groups (Chilimba) or cash transactions. Yet mobile phone ownership exceeds 75% among adults in the district, and a growing agent network has extended mobile money services into areas that formal banking has not reached.

Despite the strategic importance of Chibombo as a rural case study, empirical evidence on how mobile money is actually experienced and used at the district level remains scarce; national surveys report only macro-level trends and overlook local usage patterns and outcomes (Mwanza, 2021). This study responds to that gap by providing a granular, district-level assessment of how mobile money services are shaping financial inclusion in rural Chibombo. Specifically, the study sought to: (i) examine the adoption of mobile money services among rural households; (ii) explore strategies that can enhance mobile money adoption and usage; and (iii) identify the factors influencing mobile money adoption and effectiveness in this rural setting.

2 Literature Review

2.1 Mobile Money and Financial Inclusion

Mobile money and mobile banking are often used interchangeably but are conceptually distinct. Mobile banking allows a customer to operate an existing bank account through a mobile phone, whereas mobile money is held with a mobile network operator against an already funded pool of cash, requiring only a registered SIM card rather than the documentation associated with a conventional bank account (Donovan, 2012; Tiwari et al., 2006). This lower barrier to entry has made mobile money the first formal financial touch-point for many previously unbanked individuals, including the semi-literate and illiterate, in markets such as Chibombo (Jack & Suri, 2011).

Financial inclusion, in turn, is understood as the absence of price and non-price barriers to accessing a range of basic financial services, including credit, savings, insurance and payments (Demirguc-Kunt & Klapper, 2012; Gardeva & Rhyne, 2011). Contemporary measures of inclusion now explicitly incorporate ownership and use of mobile money accounts alongside traditional bank accounts, reflecting the extent to which mobile wallets have become part of the financial mainstream in both developed and developing economies (Demirguc-Kunt et al., 2015; Aker & Mbiti, 2010).

2.2 Global, Regional and National Trends

Mobile money has evolved from a niche service into a mainstream driver of digital finance. The GSMA (2025) reports that registered mobile money accounts surpassed two billion globally in 2024, with over 500 million active monthly users processing approximately US\$1.68 trillion in transactions. Sub-Saharan Africa remains the epicentre of this growth, accounting for more than 1.1 billion registered accounts, over two-thirds of the global total (GSMA, 2025; Communications Africa, 2025). Within Zambia, transaction volumes exceeded 2.2 billion in 2023, with continued growth into 2024 and 2025 reinforcing the deepening integration of mobile money into everyday economic life (ZICTA, 2024; Bankers Association of Zambia, 2025).

2.3 Theoretical and Conceptual Framework

The study is anchored on the Technology Acceptance Model (TAM) developed by Davis (1989), which holds that perceived usefulness and perceived ease of use jointly determine an individual's willingness to adopt a technology. In the context of mobile money, usefulness is expressed through convenience and cost savings, while ease of use relates to the simplicity of the interface and the availability of agent support. This is complemented by the Financial Inclusion Framework (AFI, 2019), which links technology adoption to tangible welfare outcomes such as savings, remittances and reduced transaction costs. Together, these frameworks informed a conceptual model in which mobile money adoption and usage, measured through account ownership, frequency of transactions and type of services used, is expected to influence financial inclusion outcomes such as access to services, savings behaviour and reduced distance to a service point, moderated by factors including network connectivity, agent availability, digital literacy and demographic characteristics.

2.4 Empirical Evidence

A substantial body of empirical work supports the positive relationship between mobile money and financial inclusion, while also flagging important limiting conditions. Aron (2018) found that mobile money increased savings by 14% and remittances by 20% in Kenya. In Zambia, Chikalipah (2021) reported improved consumption smoothing among rural households in Kitwe, while Bwalya (2022) documented positive welfare effects tempered by network and literacy barriers. Aker and Mbiti (2010) linked mobile money to reduced transaction costs in Niger, and Jack and Suri (2014) observed that men benefited more than women owing to disparities in phone ownership and financial decision-making power. Elsewhere on the continent, Mundia (2021) found that seven in ten mobile money users in rural Uganda used the service for cash withdrawals and deposits, and Sackitey (2018) confirmed a similar contribution to inclusion in Ghana. Fanta et al. (2016) showed that usage patterns vary across the SADC region, with airtime purchase dominant in some markets and person-to-person transfers dominant in others. Within Zambia specifically, Mundia (2025) found that mobile money enabled households to pay utility and subscription bills from home, reducing dependence on cash. Collectively, this literature indicates that mobile money consistently improves savings, lowers transaction costs and widens access to financial services, but that the magnitude of benefit is shaped by gender, digital literacy and network infrastructure.

Notwithstanding this evidence, district-level analyses remain scarce, particularly for rural Central Province, and few studies dis-aggregate findings by gender, age or income within a single locality. This study addresses that gap through a focused case study of Chibombo District.

3 Research Methodology

3.1 Research Design

The study adopted a descriptive research design employing a quantitative approach. This design was considered appropriate because it enabled the systematic description of usage patterns, benefits and challenges of mobile money as experienced by rural residents of Chibombo District, without manipulation of any variable (Saunders, Lewis & Thornhill, 2019). Data collected through structured questionnaires were presented using frequencies and percentages to give a clear numerical picture of how mobile money has affected respondents' access to financial services, savings behaviour and day-to-day transactions.

3.2 Population, Sampling and Sample Size

The target population comprised adult residents (18 years and above) of rural Chibombo District, together with mobile money agents and local financial sector representatives. A stratified random sampling procedure, stratified by ward and gender, was used to select households, while key informants (agents and bank/microfinance staff) were possessively selected on the basis of relevant expertise, consistent with the recommendation that stratification improves representatives across population subgroups (Saunders, Lewis & Thornhill, 2019). Respondents were drawn from Chiyuni Village, Mwacisompola, Muchenje and Chilochabalenge. Against a target of fifteen key informants, ten usable responses were obtained, a response rate of 67%, as summarized in Table 1.

Table 1: Response Rate

Category	Target Respondents	Actual Respondents	Response Rate
Key informants	15	10	67%

3.3 Data Collection and Analysis

Primary data were collected using structured, closed-ended questionnaires covering adoption, usage and inclusion indicators, complemented by secondary data drawn from FinScope and Bank of Zambia reports. Fieldwork was conducted over a period of one week and two days, preceded by pilot testing in one ward. Data were analyzed using SPSS, with descriptive statistics presented as frequencies and percentages in tables, consistent with the quantitative descriptive design (LeCompte & Schensul, 1999).

3.4 Ethical Considerations

Ethical clearance and an introductory letter were obtained from Kwame Nkrumah University prior to data collection. Participation was voluntary, informed consent was sought from every respondent, and the purpose and anticipated benefits of the study were explained beforehand. Confidentiality was maintained throughout, and no personally identifying information was collected or disclosed.

4 Results and Discussion

This section presents and discusses the study's descriptive findings in relation to the demographic profile of respondents, mobile money usage patterns, the impact of mobile money on financial inclusion, and the challenges affecting its use.

4.1 Demographic Characteristics of Participants

Table 2 presents the gender, age and educational profile of the ten respondents who participated in the study.

Table 2: Demographic Profile of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	6	60%
	Female	4	40%
Age	18–25 years	2	20%
	26–35 years	4	40%
	36–45 years	3	30%
	Above 45 years	1	10%
Education	Primary	3	30%
	Secondary	5	50%
	Tertiary	2	20%

Male respondents made up 60% of the sample against 40% female, indicating that both genders were represented, although male participation was somewhat higher. The largest age category was 26–35 years (40%), suggesting that economically active adults are the primary users of mobile money in the district, a pattern consistent with findings elsewhere in the region that link mobile money uptake to income-generating age groups (Jack & Suri, 2011). Half of the respondents had attained secondary education, which likely supports basic comprehension of mobile money menus and USSD prompts, while the presence of respondents with only primary education (30%) points to a segment of users who may need additional support to transact confidently.

4.2 Usage of Mobile Money Services

The vast majority of respondents, 90%, reported active use of mobile money services, evidencing high adoption within this rural community (Table 3). Sending and receiving money was the most common use (40%), followed by paying bills, saving money and buying airtime, each cited by 20% of respondents (Table 4).

Table 3: Mobile Money Usage Among Respondents

Response	Frequency	Percentage
Yes	9	90%
No	1	10%

Table 4: Common Mobile Money Services Used

Service	Frequency	Percentage
Sending and receiving money	4	40%
Paying bills	2	20%
Saving money	2	20%
Buying airtime	2	20%

This 90% adoption rate mirrors the high uptake documented nationally by the Bank of Zambia (2022) and reflects the accessibility that mobile money offers relative to conventional banking, which is represented in Chibombo by only a single commercial bank branch. The dominance of person-to-person transfers is consistent with Ngambi (2016), who found that mobile money in Zambia is used primarily for local remittances rather than for savings or credit, a pattern that also emerged in this study, where saving via mobile money, while present, remained less common than transacting.

4.3 Impact of Mobile Money on Financial Inclusion

Respondents were asked whether mobile money had improved their access to financial services, reduced the distance travelled to reach a financial service point, and strengthened their savings behaviour. The results, presented in Tables 5 to 7, point strongly in the affirmative.

Table 5: Access to Financial Services

Response	Frequency	Percentage
Improved access	8	80%
No improvement	2	20%

Table 6: Reduction in Distance to Financial Services

Response	Frequency	Percentage
Agree	9	90%
Disagree	1	10%

Table 7: Mobile Money and Savings Culture

Response	Frequency	Percentage
Improved savings	7	70%
No improvement	3	30%

Eighty percent of respondents indicated that mobile money had improved their access to financial services, while 90% agreed that it had reduced the distance they needed to travel to reach a financial service point. This finding is consistent with Donovan (2012), who argued that the proximity of mobile money agents relative to bank branches translates directly into time and cost savings for rural users. Seventy percent of respondents also reported improved savings behaviour, supporting Aron's (2018) finding that mobile money meaningfully increases household savings, and reinforcing the view that low transaction costs encourage a savings culture that formal banking has struggled to instil in remote areas (Donovan, 2012).

Taken together, these results affirm the study's central proposition, drawn from the Technology Acceptance Model, that where mobile money is perceived as useful and easy to use, adoption follows and translates into tangible inclusion outcomes: wider access, reduced distance to services, and stronger savings habits. The scale of these effects in Chibombo mirrors the broader Zambian experience, where the FinScope Zambia Survey (2020) attributes the majority of the national increase in financial inclusion since 2015 to mobile money.

4.4 Challenges Affecting Mobile Money Usage

Despite these positive outcomes, respondents identified several challenges that continue to constrain the effectiveness of mobile money in rural Chibombo (Table 8). Poor network connectivity was the most frequently cited challenge (40%), followed by high transaction charges (30%), fraud and security concerns (20%), and lack of mobile phones (10%).

Table 8: Challenges Faced in Using Mobile Money Services

Challenge	Frequency	Percentage
Poor network connectivity	4	40%
High transaction charges	3	30%
Fraud and security concerns	2	20%
Lack of mobile phones	1	10%

The prominence of network connectivity as a barrier is unsurprising given the low population density and limited telecommunications infrastructure typical of rural Central Province, and it echoes concerns raised nationally by the Zambia National Financial Inclusion Strategy (2017–2022), which set an 80% rural inclusion target that has proved difficult to reach in districts such as Chibombo. High transaction charges and security concerns, while less frequently cited, nonetheless point to cost and trust as continuing frictions in the adoption journey, consistent with Bwalya's (2022) observation that welfare gains from mobile money in rural Zambia are moderated by exactly these infrastructural and confidence-related barriers.

5 Conclusion and Recommendations

5.1 Conclusion

This study set out to assess the impact of mobile money services on financial inclusion among rural communities of Chibombo District, Zambia. The findings show that mobile money has become deeply embedded in the financial lives of rural residents, with 90% of respondents actively using the service, primarily to send and receive money. More importantly, mobile money was found to have measurably advanced financial inclusion: it improved access to financial services for the majority of users, substantially reduced the distance travelled to reach a service point, and strengthened savings behaviour among most respondents. These outcomes are consistent with the Technology Acceptance Model's proposition that perceived usefulness and ease of use drive both adoption and downstream welfare benefits. At the same time, poor network connectivity, high transaction charges, security concerns and limited phone ownership remain real constraints on the full realization of mobile money's potential in this rural setting. The study concludes that mobile money is a critical, though not yet complete, vehicle for financial inclusion in rural Chibombo, and that targeted infrastructural and policy interventions are needed to close the remaining gaps.

5.2 Recommendations

Building on these findings, the following recommendations are proposed:

Improvement of network infrastructure: Mobile network operators, in collaboration with the telecommunications regulator, should prioritize expanding and upgrading network coverage in rural Chibombo to reduce service interruptions that undermine reliable mobile money use.

Review of transaction charges: Mobile money service providers should reassess pricing structures for low-value, high-frequency rural transactions to make the service more affordable and encourage sustained usage.

Expansion of financial literacy programs: Government agencies, non-governmental organizations and mobile network operators should jointly deliver community-based financial literacy initiatives that build confidence in using mobile money for saving and not only for transfers.

Strengthening of security measures: Providers should reinforce fraud-detection systems and invest in user education on safe transaction practices to address the security concerns raised by respondents.

Improved access to mobile devices: Stakeholders, including government and development partners, should explore affordable device financing schemes to extend mobile money access to the minority of rural residents who remain without a mobile phone.

5.3 Limitations and Areas for Further Research

The study's findings should be read in light of its limitations: a small sample of ten respondents drawn from a target of fifteen, reliance on self-reported data, and a geographic focus limited to four wards within Chibombo District, all of which constrain generalization to rural Zambia as a whole. Future research should examine the relationship between mobile money and poverty reduction over time, the link between digital literacy and adoption intensity, and the operational challenges facing mobile money agents in rural settings, ideally using larger samples and mixed-methods approaches that combine quantitative measurement with qualitative insight into user experience.

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