

# Mobile Money Adoption in Uganda

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## ABSTRACT

Mobile money has gained a lot of acceptance in the Ugandan financial sector since its inception a decade ago. This is due to high mobile phone usage, especially in rural areas where branch banking is rare. The financial sector's adoption of mobile money has enhanced financial inclusion by providing banking services to individuals previously excluded from the financial sector. Mobile money services offer a variety of financial transactions, including payment, saving, credit, and insurance, without the need to visit a banking hall. These are poverty reduction, job creation, GDP, and the development of a sound financial sector. However, despite the increased use and growth of mobile money in Uganda, it has presented the following challenges: Some of the problems undermining the future of this innovation include regulatory barriers, cybersecurity threats, compatibility questions, and consumer scepticism about digital financial services. Solving these challenges calls for cooperation between mobile money operators, regulators, policymakers, and other interested parties to foster innovation, competition, and consumer protection while enhancing the access and usage of financial services and products. This review examines mobile money adoption in Uganda. We used available data from many reputable databases, spanning the time period from 2010 to 2024. Findings suggest that in the future, mobile money in Uganda has bright prospects in terms of future trends, new uses, and improved connections with other electronic systems. New technologies like biometric identification, artificial intelligence, machine learning, and blockchain will enhance security, user experience, and other conditions that are necessary to fulfil user needs. Communication with mobile money providers, regulators, and stakeholders is a necessary step to fully benefit from these opportunities and manage the remaining challenges. Lastly, measures such as the promotion of consumer protection, availability of financial products and services, investment in technology, and constant public sensitization would go a long way towards tapping the full potential of mobile money in Uganda, as this fuels positive social and economic change in the country.

**Keywords:** mobile money, Uganda, financial sector, cybersecurity, Gross Domestic Product (GDP)

## INTRODUCTION

Across the East African region, Uganda has, on average, the highest adoption of mobile money services that have rapidly evolved in the country over the last decade [1]. The growing use of mobile phones has boosted the uptake of mobile money services, particularly in rural areas where access to banking services is limited. People of all categories in Uganda have widely adopted the convenient use of mobile money. Mobile Money has greatly enhanced financial innovation in Uganda, extending social services, particularly banking products, to those who are unable to obtain bank accounts. This has had a positive impact on people living in rural

areas and those who do not own bank accounts; they can now safely store money, receive wages, engage in other banking services, and gain access to different types of financial products. The use of mobile money has significantly impacted Uganda's economy by simplifying transaction processes and enhancing efficiency in money sharing [2]. This has also encouraged innovation because it has spurred the growth of small businesses, particularly through the use of mobile payment platforms in the completion and execution of transactions or contracts. The Ugandan government has put in place some key policies and regulations to support

the mobile money business while reinforcing consumer protection and financial integrity.

**Benefits of Mobile Money:** Mobile money services in Uganda have greatly impacted the advancement of the country's financial sector, enhancing the possibilities of making and receiving payments for a large section of the population, particularly in rural areas [3]. Mobile money allows customers to make payments, store cash while protecting it, gain access to credit products, and save. It also provides mechanisms that allow users to conduct banking transactions, including depositing, withdrawing, transferring cash, paying bills, purchasing goods and services, and accessing credit and insurance services. Mobile money has the flexibility to allow users of the service to conduct financial transactions at any time and place without having to go to the nearest physical bank or travel long distances to get there. Mobile money transfers are generally faster and more efficient as opposed to the normal banking processes, with the transferred amount accessible to the receiver as soon as the transaction goes through [4]. Standardised transaction charges typically result in lower costs compared to average charges by most banking institutions, particularly for small-scale transactions. Other features of mobile money transactions include security and transparency. Electronic conduct eliminates the dangers associated with dealing with large sums of money. We implement security measures like encryption and authentication to prevent unauthorised individuals from accessing users' financial details and to prevent account hacking. Another advantage of mobile money transactions is that they are clear, indicating all the transactions made, which enhances accountability and reduces fraud incidences [5].

**Economic Impact:** In terms of economic development, mobile money has influenced different sectors of the economy, including poverty eradication, employment opportunities, and Uganda's GDP growth.

- **Poverty Reduction:** Mobile money has also drastically helped in the reduction of poverty levels, mainly in Uganda, through the extension of financial services. The benefits of using mobile money are that people in rural and underserved areas can safely store, transfer, borrow, and insure money, besides being active in the formal economy [3]. It also improves the quality of financial management to address various financial risks and promote income-generation activities to eliminate poverty.
- **Job Creation:** The expansion of mobile money services has contributed to employment opportunities in various

economic sectors. The mobile money sector has the potential to generate employment in various categories of professionals, ranging from mobile money agents engaged in cash in and cash out activities to software developers and customer care staff of mobile money providers. Furthermore, with the increase in mobile money, there has been increased innovation and entrepreneurship, and most small businesses are adopting the mobile money payment system to market their products to new markets.

- **GDP Growth:** In any case, through improving the operation of financial transactions, encouraging economic activity and innovation, and supporting entrepreneurship, mobile money has positively impacted Uganda's GDP. Mobile money has increased payment efficiency, speed, and security, while reducing the use of cash proceeds in the financial industry. Furthermore, mobile money has helped to increase the economy's cash base, improve access to financial services, and encourage entrepreneurship, leading to the development of the economy's retail, agriculture, and service sectors.
- **Financial Sector Development:** The use of mobile money has also helped to expand formal financial services and enhance innovation within the Ugandan financial sector [6]. Mobile money providers have come up with products such as mobile savings and credit, mobile microloans, and insurance, mostly for the BOPs. It has not only provided consumers with new opportunities to receive a wider range of financial services but has also promoted competition and productivity within the financial sphere.
- **Government Revenue and Fiscal Inclusion:** The development of mobile money has also impacted other aspects, such as government revenue and fiscal inclusion. Mobile money transfers include transaction fees and taxes, which boost government revenue. Furthermore, we can use mobile money platforms to disburse government payments and social transfers, improving the quality of public service delivery and ensuring the money reaches the intended beneficiaries [7].

**Social Impact:** Mobile money has registered various social effects on people and communities in Uganda

by enhancing individual and social efficiency and economic development.

- **Individual Empowerment:** Mobile money has transformed people by giving them more agency and increasing their financial independence. Mobile money accounts can be beneficial to every person who wants to store money, make payments, and avail other financial services, excluding being a branch member [8]. This financial empowerment enables people to control, save, and invest money, as well as deal with unforeseen events and plan for the future, which improves their quality of life and makes them financially secure.
- **Fostering Entrepreneurship:** Mobile money has indeed extended hope for entrepreneurship in Uganda since it offers individuals an easier way of undertaking business activities. Mobile payments benefit small businesses and microentrepreneurs by providing new customer payment methods, cash flow control, credit, and financing [9]. Furthermore, with mobile money, e-commerce and digital business have evolved to new heights, allowing entrepreneurs to explore new ways to reach out to markets. It is not only about providing job opportunities, but also about encouraging social entrepreneurship and economic growth among the population.
- **Improving Livelihoods:** Research reveals that mobile money significantly impacts the lives of individuals and families in Uganda. Mobile money enables users to save, borrow, and use insurance services for income-generating activities, manage consumption cycles, and accumulate wealth over time. Furthermore, mobile money plays a crucial role in helping families, particularly those in rural areas, receive money from their employed family members in urban areas or abroad. These funds are a source of livelihood for many households, enabling families to pay for basic necessities, provide education, and have an enhanced quality of life standard [10].
- **Enhancing Social Welfare:** It has also increased social utility in Uganda by improving living standards and encouraging social cohesion. Mobile money allows the poor, especially women, youth, and disabled people, to have and access mobile money accounts to improve their

living standards and thus enhance the economic growth of the country. Additionally, the targeted population can receive welfare payments on time by using mobile money solutions as vehicles for government payments and other transfers.

**Challenges and Limitations:** Despite mobile money's rapid growth and widespread use in Uganda, there are still barriers that prevent it from expanding even further.

- **Regulatory Barriers:** There could be regulatory constraints and conditions that affect the operation of the mobile money operators in Uganda [11]. There is also an expectation that new regulations such as Know Your Customer (KYC) and anti-money laundering (AML) regulations may place mobile money providers under more constraints, resulting in high compliance and administrative costs. Furthermore, the high level of regulation or irregularities by different centers can cause confusion or slow down advancement in the mobile money business.
- **Cybersecurity Risks:** Due to the nature of mobile money transactions that involve transmitting financial data through mobile phones, hacking, data privacy invasions, and fraudulent activities are critical risks to the success of mobile money platforms. Weak security measures, poor infrastructure, and low user awareness of necessary security measures are some of the risks associated with cyber threats to mobile money [12].
- **Interoperability Issues:** A number of issues have, however, persisted to hinder interoperability, which is the efficiency by which different types of mobile money platforms can transact with each other within the country. Instead, fragmentation with many different providers and overlapping services, each using their own closed ecosystems, causes problems for interoperability and does not allow users to easily transfer their money across different providers. When there is no compatibility, customers and businesses encounter several issues, such as increased costs, time costs, and unpleasant inconveniences.
- **Lack of Trust in Digital Financial Services:** It's likely that some Ugandans remain skeptical of mobile money solutions due to concerns about their security, stability, and transaction transparency. Some of the crucial barriers may include

low digital literacy skills, cultural and long-held behavioral tendencies that give preference to cash usage, and avoidance of mobile money platforms due to past negative experiences involving fraud or technical issues. If we do not effectively realize and develop the various administrative measures aimed at consumer protection, customer relations, and organisational transparency, mobile money among consumers cannot receive a strong boost.

- **Infrastructure and Connectivity Challenges:** Access to facilities and networks, particularly in rural and hard-to-reach areas, may pose a challenge in the adoption of mobile money. These are factors such as a lack of network coverage, inconsistent electricity supply, and poor internet connectivity that reduce mHS access and utilization, especially in unbanked regions where financial inclusion networks are limited. We should aggressively pursue efforts to increase demand for the mobile money service by improving the telecommunications infrastructure, network coverage, and investment, to ensure the service's availability throughout the country.

**Regulatory Environment:** For mobile money operations in Uganda, the Bank of Uganda (BoU) and the Uganda Communications Commission (UCC) are the main regulatory authorities. The BoU regulates and supervises all financial institutions and payment systems, such as mobile money, and grants them licenses. Key responsibilities include implementing prudential and operational standards, assessing compliance with those standards, and managing risk, including money laundering, terrorism financing, and system risk. Together with other regulatory authorities, the BoU sets the policies and regulations of mobile money with a view to enhancing innovation and competition, as well as extending financial services. UCC regulates MNOs in the telecommunications sector that provides the infrastructure and platforms for mobile money services. It awards licenses to MNOs and oversees their activities in order to enforce compliance with technical standards, quality of service, and consumer protection. Cooperation between UCC and BoU is crucial to deal with the regulatory concerns that arise from the interface of two domains: the financial and telecommunications industries, including mobile money integration, personal data protection, and cybersecurity. The other benefit is that regulatory authorities encourage innovation and consumer

protection by implementing a risk-based model of regulation. They may use terms such as regulatory sandboxes, pilot projects, and limited legal immunity to promote innovation and testing while addressing concerns about potential negative effects on consumers. Consumer protection measures include price disclosure, complaints and compensation mechanisms, and data protection policies put in place to protect the interests of mobile money users and promote confidence in digital financial services [13]. **Security and Fraud:** The challenges of secure mobile money transactions include fraud and identity theft, unauthorised access, and other cyber-related threats to mobile money in Uganda. Phishing, social engineering, and account takeover may include actions such as using emails, text messages, or phone calls to deceive users and get them to disclose their account details, PINs, or personal details. To minimise these risks, user awareness is paramount, with progressive methods of two-factor authentication like OTP (one-time password) codes used in the process of logging into a system or confirming a transaction. Transaction monitoring systems can spot possible fraud by noticing patterns or changes, like unusual account activity. On the other hand, fraud detection and prevention methods like machine learning algorithms, behavioural analysis, and anomaly detection solutions can stop fraud from happening [14].

Identity theft involves criminals posing as genuine customers who need access to mobile money accounts or their personal details. Some of the recent prevention strategies include high standards in KYC procedures, biometrics, secure channels, and password requirements. Poor passwords, lost or stolen devices, and platform loopholes can potentially compromise mobile money platforms. To reduce this risk, users should create strong passwords that are difficult to guess and regularly update them. Mobile device management policies, such as screen locks, device encryption, and remote wipes, can prevent unauthorized access to the device in the event of theft or other circumstances. There are also other options, such as SMS OTP, email, or biometric, that can help enhance the security measures to ensure that the user's identity is genuine and thus prevent unauthorized access to users' accounts.

**User Adoption and Behaviour:** Various factors, such as trust, awareness, education, and culture, play a key role in the adoption and usage of mobile money in Uganda [15]. Trust is important because users require assurance of mobile money platforms' security, reliability, and integrity. Reputation, prior experience, and beliefs about security and privacy

can influence trust. To ensure that the users have confidence in the mobile money services, the providers need to put in place measures regarding security, accountability, and support services [12]. Therefore, educating Ugandan consumers on mobile money usage is crucial for their adoption. Some people, especially those in rural and hard-to-reach areas, may not be aware of or comprehend anything about mobile money services and the opportunities they offer. User engagement campaigns, product demonstrations, and the proper distribution of information to potential software users can raise awareness and enhance adoption. Creating awareness for end-users with low digital or financial literacy can enhance their ability to effectively utilize mobile money services. Culture is another factor affecting user adoption and behavior with regard to mobile money [16]. Mobile money providers must consider cultural sensitivity when coming up with their service offerings and marketing strategies. Adapting suitable products to local cultural perceptions, beliefs, and practices can increase the likelihood of acceptance and use among different groups of society [17]. This shows that perceived usefulness and perceived value are two critical determinants of mobile money usage. By offering additional useful features, products, and appealing programmes like discounts, rewards, and loyalty programmes, mobile money providers can enhance the ultimate value of their services. The actual case studies, success stories, and testimonials also play an

Therefore, it is evident from this study that mobile money services have improved the liberalization of the financial sector in Uganda, the wellbeing of citizens, and economic development over the past decade. Among these are the growing number of mobile phone users and the convenience and adaptability of mobile money, particularly in remote and difficult-to-reach areas, which have significantly changed the management and accessibility of various financial transactions for both individuals and businesses in the nation. Mobile money has not only transformed the financial sector through innovation, but it has also allowed people who were previously unable to access the formal financial market to access basic banking solutions. Mobile money platforms allow individuals to conduct multiple financial transactions, such as payments, savings, credit, and insurance, without physically visiting a bank. This has empowered individuals, particularly those residing in rural areas, by providing them with financial tools to improve their lives and elevate their social standing. In addition to this, mobile money has had several impacts on Uganda's economy by enhancing efficiency, speed, and

important role in convincing the users to adopt and use mobile money, as well as its practical implications.

**Future Outlook:** We anticipate continued growth and evolution of mobile money in Uganda in the coming years. For instance, factors such as growing smartphone usage, expanding network coverage, and growing demand for digital financial services drive mobile money usage in Uganda [18]. Financial inclusion promotes savings accounts, credit facilities, insurance products, and investment opportunities, among others, empowering individuals and businesses to access a wide range of financial products and services. Therefore, mobile money is deepening its interaction with other digital solutions and services, including e-commerce, digital credit, and utilities, allowing users to make transactions and extend their client base. Future partnerships between mobile money operators and digital service providers will continue to demonstrate more convergence and advancement in the digital financial environment. In Uganda, advanced technologies such as biometric identification, artificial intelligence, blockchain, and machine learning present the potential for evolutions in mobile money in terms of security features, client experience, and new exciting features such as predictive analytics, tailored financial suggestions, and intelligent assistants.

## CONCLUSION

reliability in financial transactions, as well as promoting entrepreneurship, job creation, productivity, and innovation in the financial sector. Mobile money services have also assisted governments globally to increase revenues and fiscal collection through transaction fees and taxes, as well as the effective delivery of government payments and other social interventions. Despite the acknowledged positive outcomes and impacts of mobile money in Uganda, its uptake faces various recognized challenges and limitations, such as regulation, cyber security, interoperability, a lack of trust in digital financial services, infrastructure, and connectivity. This will demand the collective endeavours of the mobile money operators, the regulators and policymakers, and other stakeholders in formulating suitable responses and solutions for enhancing innovation, competition, consumer protection, financial access, and inclusion, besides safeguarding the overall soundness of the mobile money value chain. Therefore, the future of mobile money in Uganda appears to be bright, with increasing trends, new applications, and enhanced linkages with other digital systems. Mobile money

services will also continue to benefit from emerging technologies such as biometric identification, artificial intelligence, blockchain, and machine learning to advance security, UX, and other unique features required to meet new user and business needs. To fully harness these opportunities and still deal with the remaining challenges, it is imperative to have a very close working relationship between mobile money providers, regulatory bodies, and any

other related stakeholders. We should aggressively pursue efforts on consumer protection and financial inclusion, invest in technology and infrastructure, constantly create awareness, and build customer trust. In this way, Uganda will be able to realize the full potential of mobile money with the goal of positively transforming people's economic and social lives, thereby creating positive social and economic change in the country.

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