

Evaluation of the Factors Affecting Mobile Money Operators' Credit Access: A Case Study of Lusaka Central Business District.

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Abstract:

Background: The government of the Republic of Zambia had long emphasized the significance of fostering economic growth through enhanced access to financial services. However, the persistent issue of income inequality and sluggish economic expansion underscored the need for targeted interventions. In response, the emergence of Mobile Network Operators (MNOs) in the financial sector, offering a diverse range of services including credit access, represented a concerted effort to address these challenges. Despite these advancements, a comprehensive understanding of the determinants of MNOs' credit access remained lacking, particularly in the specific context of the Lusaka central business district. Consequently, the primary purpose of this study was to rigorously evaluate the various factors that influenced mobile money operators' access to credit within the Lusaka central business district of Zambia.

Method: This research employed a case study research design to investigate the factors that influenced credit access for Mobile Network Operators (MNOs) in the Lusaka central business district. A mixed-methods approach was adopted, combining quantitative and qualitative data collection methods. The study's sample consisted of 125 MNOs, which were selected through a combination of simple random sampling and purposive sampling to ensure a representative cohort of respondents. This approach facilitated a holistic exploration of the various factors that impacted credit access among MNOs.

Results: The study's findings highlight several key determinants of credit access among mobile money operators. Demographic factors, such as age, emerge as influential, with youths aged 20-34 demonstrating both technical proficiency and a better grasp of credit information. Education levels also prove to be correlated with mobile money service operation, as respondents with higher education levels exhibit greater ease in accessing and understanding mobile money credit services. Network availability emerges as a pivotal factor driving the adoption of mobile money services. However, a notable proportion of respondents expressed challenges in accessing credit through mobile networks. Trust and security concerns are identified as significant barriers deterring potential users from engaging with mobile money services.

Conclusion: In light of the study's findings, it is recommended that comprehensive awareness programs be implemented within central business district schools. These programs aim to equip budding entrepreneurs with the knowledge and skills necessary for responsible engagement with mobile money services. By targeting the youth demographic, these initiatives seek to instill sound financial habits from an early age, thereby contributing to improved financial access, reduced income inequality, and enhanced economic growth in the Republic of Zambia.

Key terms: Mobile Money Operators, Credit Access, case study, Lusaka Central Business District, and Zambia.

I. Introduction

Low-cost financial products and services played a pivotal role in expanding access to financial systems, thus alleviating socio-economic vulnerabilities. However, this crucial endeavor remained a challenge for a significant portion of economically vulnerable individuals, curtailing their ability to pursue opportunities for improved livelihoods and safeguard themselves against distinctive vulnerabilities (Demirguc-Kunt and Klapper, 2012). In response, governments globally had long been formulating policies and strategies to foster financial inclusion. Seizing this opportunity, the telecommunications industry swiftly entered the arena with innovative mobile money services. This transformative shift led to the emergence of Mobile Network Operators (MNOs), ushering in a diverse range of financial services, including the crucial dimension of credit access. Zambia exemplified this dynamic landscape, with MNOs offering an array of financial services, prominently featuring the Mobile Money Credit Facility.

This chapter situated our investigation within the bustling backdrop of Lusaka Central Business District, illuminating the intricate web of factors influencing access to mobile money credit. We delved into the core research problem, delineated the study's objectives and queries, highlighted its profound significance, and outlined its delimited scope.

Embedded within the priorities of the Republic of Zambia, the pursuit of economic growth through heightened financial access

remained an abiding commitment. This endeavour gained added significance from insights shared by Beck et al. (2009), spotlighting the pivotal role that the absence of financial access often played in perpetuating income inequality and hampering economic expansion. In response to this exigent challenge, the emergence of Mobile Network Operators (MNOs) in the financial realm brought transformation. Their diverse offerings, including credit access, stood as testament to evolving strategies to address this multifaceted concern (ibid).

The rise of mobile money services, epitomized by the pioneering M-PESA in Kenya, constituted a revolutionary development. Safaricom's launch of M-PESA in 2007 marked the advent of an era where financial transactions could be executed through mobile devices (Ngambi, 2016). This innovation reverberated through developing nations, engendering empowered financial landscapes across Africa and South Asia.

In Zambia, mobile money utilization was primarily manifested in local money remittances and as a convenient alternative to traditional cash payments. Despite the considerable proliferation of mobile phone usage, the adoption of mobile money services remained intriguingly modest. This sentiment was encapsulated in the 2019 National Payment Systems report, which recorded a 12 percent upswing in registered mobile phone subscribers.

Central to this study was the pivotal interplay between technology acceptance and financial inclusion, serving as a linchpin in unlocking enhanced financial participation. Zambia's mobile phone penetration rate, as underscored by the ZICTA (2018) report, underscored the ripe landscape for mobile-based financial inclusion, with over 73 percent of the population engaged. The government's National Financial Inclusion Strategy for 2017–2022 underscored this commitment, articulating the importance of accessibility, innovation, and customer-centricity. Amid these encouraging strides, it was noteworthy that mobile money services often served as alternatives to cash rather than comprehensive financial instruments.

Nestled within this dynamic context, our research aimed to dissect the intricate factors underpinning Mobile Money Operators' credit access, focusing on the vibrant heart of Lusaka's Central Business District. The ultimate goal was to provide nuanced insights that not only uncovered barriers but also paved the way for an enriched mobile money service experience. This study delved into the depths of these considerations, unravelling the complexities that shape mobile money operators' credit access within this distinctive context.

1.1 Statement of the Problem

The adoption of mobile money services played a pivotal role in determining financial accessibility for users. Zambia's mobile phone user base of over 73 percent, highlighted in the ZICTA (2018) report, provided an ideal foundation for mobile-based financial inclusion. The government's commitment to mobile services, evident in the National Financial Inclusion Strategy (NFIS) 2017–2022, emphasized accessibility, diversity, innovation, and customer-centricity. Despite these efforts, mobile money services were often viewed merely as fund transfer alternatives rather than comprehensive financial tools. Mere availability in townships didn't ensure widespread adoption; factors like access to conventional financial services influenced adoption decisions. Despite the 73 percent cell phone penetration, as per ZICTA 2018, only 38 percent had used mobile money services. Importantly, even among these users, not all availed full-service offerings. This disparity highlighted the complexity of financial accessibility. A comprehensive understanding of mobile money services had to consider availability, accessibility, usage frequency, suitability, and quality for all income levels in Zambia. According to UNCD report (2022), world over, there are only six products that are utilised through mobile money; P2P transfers, merchant payments, bulk disbursements, international remittances and airtime top ups. This study aimed to evaluate factors affecting Mobile Money Operators' credit access in Lusaka's central business district, seeking to enhance mobile money service accessibility. By delving into the nuances of service utilization in a bustling economic hub, the study sought to offer insights that promote financial inclusion, contributing to local economic growth.

1.2 Research Objectives

- i. To describe the relationship between the consumers' demographic, mobile money characteristics, social influences on adoption of mobile money services.
- ii. To describe the factors that influence consumers to use mobile money services.
- iii. To describe the factors that make customers abstain from using mobile money services
- iv. To describe challenges faced by mobile money operators in accessing mobile money credit in the Central business district of Lusaka and make recommendations on the way forward.

The objectives of the study were arrived at owing to the discrepancies in usage and other factors noted in the statement of the problem above.

1.3 Research Problem

- i. What is the relationship between the consumers' demographic, mobile money characteristics, social influences on adoption of mobile money services?

- ii. What factors influence customers to use mobile money services?
- iii. Why do customers abstain from using mobile money services?
- iv. What challenges is mobile money facing in Lusaka's Central business district?

The research questions were carefully selected to mirror the objectives of the study to ensure that they bring out correlating results as indicated in the statement of the problem for the research.

II. Literature Review

2.1 Theoretical and Conceptual Framework

A theoretical framework is the 'blueprint' or guide for research (Grant & Osanloo, 2014). It is a framework based on an existing theory in a field of inquiry that is related and/or reflects the hypothesis of a study. It is a blueprint that is often 'borrowed' by the researcher to build his/her own house or research inquiry (Adom, Hussein, & Agyem, 2018). This study used two theories, the institutional and the Technology Acceptance Model, to explain the factors affecting Mobile money operators' credit access, in the Lusaka central business district.

2.1.1 Institutional Theory

According to the institutional theory, key insights into financial exclusion are considered. It refers to analyses that seek to comprehend the broad context and the main institutions involved in the issue being studied. For example, under new institutional economics, it highlights the role of history as well as institutions in effective markets, governments, communities, and societies in understanding financial exclusion (Haslinda, 2014). This study is based on the institutional theory. This theory rejects an analysis of financial exclusion which is based solely on consumer choice that is associated with the neo-classical approach and yet serves a better picture of the structure and processes that are rooted in organizations, markets as well as policies. Using this approach, a more complete understanding of financial inclusion can be gained through the role of institutional settings (David, 2010).

2.1.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model is another model that can be used to explain user behaviour on Mobile money operators' credit access services in Zambia. It is developed from the theory of reasoned action and adapted some of its principles to the context of user acceptance of a system. The Technology Acceptance Model was developed by Davis in 1989 and suggests that when users are presented with new technology, a number of factors will influence their decision about how and when they will use it. It's a systems theory that models how users come to accept and use technology. It assumes that actual information technology system use is affected by behavioural intentions that are affected by attitudes toward use. The intention impacts the behaviour of actual system usage (Davis, 1989). The technology acceptance model encompasses two principles; the perceived ease of use and the perceived usefulness of the technology. According to Venkatesh (2016), perceived ease of use refers to the degree to which a person believes that using a technology would be free of effort, while perceived usefulness relates to the degree to which a person believes that using technology will enhance their work or action they intend to perform. This suggests that perceived ease of use and perceived usefulness predicts the attitude toward the use of technology, then attitude towards use predicts behavioural intention to use and finally, intention predicts the actual use of technology (Davis, 1989). This theory is adopted in the present research as it inculcates key aspects that come with the use and implementation of credit access initiatives to small and medium enterprises and other financial service providers.

The chosen theoretical framework for this study is the Technology Acceptance Model (TAM), which serves as a lens through which to analyse the adoption and usage of mobile money services in relation to various factors, including demographics, social influences, and other contextual elements. The literature review findings can be linked to TAM to demonstrate how they align with and support the model's constructs.

To describe the relationship between consumers' demographic, mobile money characteristics, social influences on the adoption of mobile money services. In the context of TAM, the literature review findings on demographics align with the TAM's construct of "perceived ease of use" (PEOU) and "perceived usefulness" (PU). The findings that younger individuals, especially those within the 26-35 age range, are more inclined to adopt mobile money services due to convenience and time-saving potential (Karjaluoto et al., 2016; Bankole, 2011) are in line with PEOU. Similarly, studies that emphasize the role of societal and cultural factors in influencing consumer behaviour (Karjaluoto et al., 2016; Wedaga Stephen, 2017) can be linked to the TAM's PU construct, where societal norms and cultural perceptions shape users' attitudes toward technology adoption.

To describe the factors that influence consumers to use mobile money services. The concept of convenience and accessibility highlighted in the literature review (Munnukka, 2017) is directly aligned with the TAM's PEOU construct. Users' perception of how easy and accessible a technology is impacts their willingness to adopt it. The literature review's emphasis on the convenience and efficiency provided by mobile money services resonates with the TAM's focus on ease of use.

To determine the factors that make customers abstain from using mobile money services. The factors deterred from adoption, such as perceived complexity and security concerns (Maimbo, 2016; Waris, 2015; Juma and Moronge, 2015), can be linked to the TAM's constructs. Perceived complexity aligns with PEOU, where users' perception of technology's complexity affects their willingness to adopt it. Security concerns and lack of awareness are aspects that influence users' perception of usefulness, directly linking to the TAM's PU construct.

To explore challenges facing mobile money operators in the Central Business District and make recommendations for the way forward. In the context of TAM, the literature review's findings regarding access to credit and its impact on mobile money adoption (Richard, 2022) can be related to the TAM's PU and PEOU constructs. Access to credit directly influences users' perception of the technology's usefulness, while recommendations for gender-sensitive policies and expanded access to financial institutions align with the TAM's consideration of external factors that influence the perception of usefulness.

Overall, the chosen TAM provides a comprehensive framework for analyzing the findings of the empirical literature review. The model's constructs of perceived ease of use and perceived usefulness are intricately connected with various factors discussed in the literature, offering a well-rounded perspective on the adoption and usage of mobile money services. Furthermore, the TAM's flexibility to integrate demographic and social factors, as well as its established role in technology adoption research, makes it a suitable framework for this study.

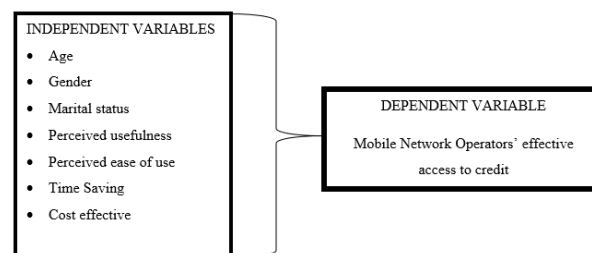


Figure 1: Mobile network operators' access to credit conceptual framework

Source: Author (2023)

2.2 Empirical review

2.2.1 Mobile Money Adoption

1.1.1.1 Demographics and Mobile Money Usage

Age plays a pivotal role in mobile money adoption, with studies consistently highlighting its significance. For instance, Karjaluoto et al. (2016) found that the average age of mobile money users falls within the 26-35 range. Younger individuals are more inclined to embrace these services due to their familiarity with technology and digital platforms (Karjaluoto et al., 2016). Moreover, Bankole (2011) observed that convenience and time-saving potential were more valued by younger users compared to their older counterparts. This trend underscores the importance of age in shaping the adoption of mobile money services.

However, while age is a prominent factor, education levels do not significantly influence mobile money adoption. Bankole (2011) noted that educational background does not play a determining role in the utilization of these services. This finding is corroborated by studies in different regions, such as Jansen's (2014) research in Finland, which identified educated and technology-savvy individuals as the primary users of online banking. Similarly, in China, Li's observations revealed that education did not significantly impact mobile banking usage (cited in the text).

1.1.1.2 Social Influence on Adoption

Consumer behaviours in mobile commerce is significantly influenced by societal, cultural, and individual factors. Karjaluoto et al. (2016) emphasized that these influences shape purchasing decisions and affect the adoption of mobile money services. Social norms, cultural expectations, and peer behaviour play a crucial role in determining individuals' willingness to adopt new technologies. Wedaga Stephen's study (2017) further highlighted the interplay between social factors, disciplinary actions, and organizational success. This suggests that social dynamics not only impact consumer behaviour but also influence employee performance within an organization.

2.2.2 Factors Shaping Mobile Money Usage

Factors Influencing Usage: Mobile phones' portability and location-centric nature contribute to the convenience of transactions, making mobile money services appealing to users. Munnukka (2017) noted that mobile phones enable users to engage in various online activities, enhancing the convenience of mobile money transactions. The accessibility of mobile phones anytime, anywhere adds to the overall appeal of mobile money services. The ability to perform transactions seamlessly aligns with consumers' preferences for convenience and efficiency.

2.2.3 Determinants of Mobile Money Non-Usage

Factors Deterrent to Adoption: Despite the advantages of mobile money services, several factors can deter potential users from adopting them. Maimbo (2016) highlighted that customers may perceive mobile money technology as complicated, leading to hesitancy in adoption. Waris (2015) and Juma and Moronge (2015) further identified security concerns and lack of awareness as factors hindering adoption. These challenges underscore the need for addressing perceived complexities, enhancing security measures, and raising awareness to promote wider adoption.

2.2.4 Central Business District Mobile Money Challenges

Mobile Money and Access to Credit: Research conducted by Richard (2022) in Ghana delved into the impact of mobile money, particularly the "Momo" product, on access to finance. The study revealed that both mobile money accounts and accounts in other financial institutions increased the likelihood of households applying for credit. This finding underscores the potential of mobile money to contribute to improved access to credit for underserved populations. Additionally, the study emphasized the need for gender-sensitive policies and expanded access to financial institutions to ensure inclusivity.

2.2.5 Factors Influencing Employee Performance

Studies exploring factors influencing employee performance shed light on the interplay between motivation, access to credit, and discipline. Elqadri et al. (2015) emphasized the importance of motivating factors, disciplinary actions, and organizational discipline in shaping employee performance. Tumilaar's research (2015) highlighted that firms' access to credit markets positively impacts employee performance, underscoring the significance of maintaining a productive work environment. Network operations and disciplinary codes also emerged as key influencers of employee behavior and performance (Tumo, 2017; Ehiyamen et al., 2009).

1.1.1.3 Currency Rebasement and Adoption

Vivian Dzokoto and Mwiya Imasiku (2019) examined the impact of currency rebasement on mobile money adoption in Zambia. The study suggested that despite the introduction of more portable legal tender, adoption rates of mobile money were not significantly impacted. Factors such as limited payment options, lack of awareness, and confusion between online banking and mobile money were identified as influences on adoption rates. This study underscores the need to address factors beyond technology to promote wider adoption of mobile money services.

1.1.1.4 Security Risks and Mobile Money

Security risk is a critical consideration in mobile money services, encompassing both technical performance concerns and personal security and privacy. Text (2019) highlights that mobile money services offer encrypted and secure transactions, reducing the risk of loss or theft of cash. Regulatory authorities play a crucial role in ensuring customer welfare and security through regulations covering areas such as KYC requirements, transaction limits, transparency, and quality of service.

2.2.6 Research Gap

While the provided narrative presents a comprehensive overview of the conceptual framework, theoretical framework, and the linkages between them and the literature reviewed, there is a notable research gap that emerges from the discussion. Most of the studies conducted on the associated factors affecting Mobile money operators' credit access are from foreign countries. For Zambia, statistical information relating to mobile money services have been outlined. The survey has detailed the adoption of mobile money services as part of formal financial service sector growth.

Despite the thorough exploration of factors influencing mobile network operators' services access, the existing literature primarily focuses on the traditional services derived from mobile money service providers such as; P2P transfers, merchant payments, bulk disbursements, international remittances and airtime top ups. None of the studies surrounded the credit part of financial inclusion brought by the MNOs.

The existing literature review mainly delves into user-centered factors like age, convenience, security concerns, and awareness (Maimbo, 2016; Waris, 2015; Juma and Moronge, 2015; Karjaluoto et al., 2016; Bankole, 2011) all centred on the traditional services offered by mobile network providers, but it does not capture the broader regulatory, economic, and infrastructural aspects that can potentially impact credit access for mobile network operators. These factors could include government policies related to financial inclusion, macroeconomic conditions affecting credit availability, the competitive landscape among mobile money operators, and the regulatory environment governing financial services within the district.

To address this research gap, further investigation is needed to explore the broader contextual factors that might be influencing mobile network operators' credit access. Understanding how these systemic factors interact with individual-level factors could provide a more holistic view of the credit access landscape within the Lusaka central business district. This expanded perspective could potentially lead to insights and recommendations that go beyond credit accessibility for mobile money operators.

In conclusion, the current research narrative effectively establishes the connections between the conceptual framework, theoretical framework, and the literature reviewed, offering insights into the individual-level factors influencing credit access for mobile network operators. However, the research gap lies in the lack of exploration of broader systemic and institutional factors that could contribute to a more comprehensive understanding of the credit access ecosystem. Addressing this research gap could enhance the study's overall contribution to the field of mobile money services and credit accessibility.

Research methodology

2.3 Philosophic Framework

Positivism involved generating generalizations from observable social realities using empirical methods (Saunders et al., 2019: 144). Quantitative research designs, associated with positivism, employed structured data collection techniques (Saunders et al., 2019). Interpretive philosophy emphasized understanding of subjective meanings and social constructs (Denzin & Lincoln, 2018 as cited in Saunders et al., 2019). Qualitative research aligned with this philosophy, aiming to interpret these meanings (Saunders et al., 2019).

2.4 Research Design and approach

The research utilized a case study design to attain in-depth contextual understanding (Mugenda & Mugenda, 2003), enabling an exploration of essential case attributes and their implications. Employing both quantitative and qualitative approaches, the study gathered numerical data and perspectives. Primary data was collected through questionnaires administered within Lusaka's central business district.

2.5 Study Site and population

The study focused on Lusaka's central business district due to its relevance and accessibility to micro and medium businesses. The target population consisted of small and medium business operators, specifically those operating mobile booths in Lusaka's central business district.

2.6 Sample Size and Sampling Procedure

A minimum sample size of 85 was calculated using a proportion formula (Yamane, 1967). A sample of 125 participants was administered questionnaires. Simple random sampling was used for participant selection.

2.7 Data Collection

Secondary data from published sources such as books, journals, articles, and the internet provided insights. Questionnaires were administered by the researcher to collect quantitative and qualitative data. Questionnaires with closed-ended questions were used for their efficiency and standardized approach.

2.8 Reliability and Validity

The research tool's reliability was ensured through standardization and pilot testing. Validity was maintained through expert input and clear, specific questions.

2.9 Data Analysis

Data analysis was conducted using SPSS version 23, involving descriptive and bivariate analyses, including chi-square tests. SPSS results were visualized in MS Excel, and the final report was compiled using MS Word.

2.10 Ethical consideration

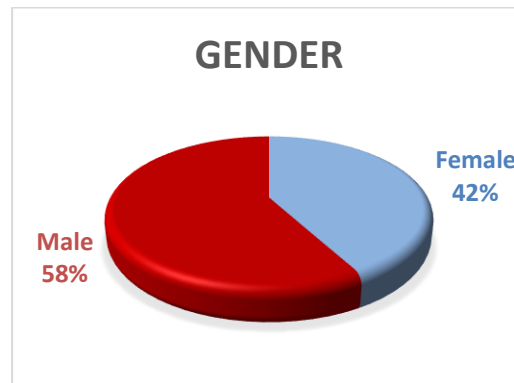
Emphasized the protection of participants' rights, informed consent, fair treatment, and confidentiality. It underlined the role of research ethics in guiding responsible conduct and highlighted that participants were informed about the research's purpose and the sharing of findings. The study's commitment to justice was mentioned, along with the removal of personal identifiers from collected data. The overall aim was to ensure high ethical standards in research while safeguarding participants' well-being and privacy.

Findings

2.11 Characteristics of Study Respondents

Among the 96 respondents, 58% were male, and 42% were female (Figure 2), with the largest subgroup (47.9%) falling within the 25-29 age range (Table 1).

Figure 2: Gender of respondents



Source: Researchers field work

The majority of participants belonged to the 25-29 age category. In terms of marital status, 49% were married, 35.4% were single, and 15.6% were divorced. For mobile money transactions, Airtel (30.2%) and MTN(18.8%) emerged as the dominant network providers. In terms of educational attainment, 18.8% had tertiary education, 50% had secondary education, and 31.3% had primary education. In relation to income, 64.6% earned less than 1000 Kwacha per month, while 19.8% earned between 1000 and 3000 Kwacha per month (Table 1).

Table 1: Characteristics of study respondents

Characteristics of study respondents	Frequency (N=96)	Percent (%)
Age		
20-24 years	11	11.5
25-29 years	46	47.9
30-34 years	17	17.7
35-39 years	10	10.4
40-44 years	8	8.3
45-49 years	2	2.1
50+ years	2	2.1
Marital status		
Married	47	49
Single	34	35.4
Divorced	15	15.6
Years in operation		
Less than a year	52	54.2
1 year	18	18.8
2-3 years	16	16.7
Above 4 years	10	10.4
Network provider used		
MTN and Airtel	40	41.7
MTN	18	18.8
Airtel	29	30.2

Zamtel	9	9.4
Highest level of Education		
Tertiary	18	18.8
Secondary Level	48	50
Primary	30	31.3
Level of Income		
Less than 1000 Kwacha per month	62	64.6
1000 to 3000 Kwacha per month	19	19.8
3000 to 4900 Kwacha per month	11	11.5
5000 kwacha per month and above per month	4	4.2

Source: Researcher field work

2.12 Influence of respondents' characteristics on adoption of Mobile Money Services

Among the respondents, the younger age group (25-29 years) demonstrated higher effectiveness in utilizing mobile money services, with 60.7% finding the service effective. In contrast, those aged 50 and above were less likely to perceive the service as effective, with only 28.7% finding it effective. Marital status, on the other hand, did not appear to significantly impact mobile money adoption rates. Further analysis revealed that respondents with secondary education showed a greater effectiveness in utilizing mobile money services (71.3% effective), whereas individuals with primary education exhibited lower effectiveness (43% effective) as shown in table 2.

Table 2: Characteristics of respondents influences on adoption of mobile money services

Characteristics of respondents	Operation of mobile money services			
	Not effective 44.0 % (42)	Effective 6.0% (54)	Total N=96	P-value
Age				0.0001
20-24 years	44.5	55.0	100	
25-29 years	39.3	60.7	100	
30-34 years	48.5	51.2	100	
35-39 years	42.3	57.7	100	
40-44 years	55.6	44	100	
45-49 years	56	44	100	
50+ years	71.3	28.7	100	
Marital status				0.2673
Married	43.4	56.6	100	
Single	45	55	100	
Divorced	46.7	53.3	100	
Education				0.0000
Tertiary	44.4	55.6	100	
Secondary Level	28.7	71.3	100	
Primary	57	43	100	

Source: Researcher field work

These findings underscored a noteworthy relationship between age, education, and the adoption of mobile money services. Younger individuals seemed more inclined to adopt such services due to their familiarity with technology, as reported by ZICTA (2019). However, adoption barriers included concerns about trust and security, as highlighted by Ehiyamen et al. (2009). Regulatory efforts also played a role in influencing consumer trust in mobile money transactions, thereby impacting overall adoption rates. Challenges related to accessibility and a lack of awareness further hindered adoption, in line with ZICTA's findings (2019).

Nevertheless, mobile money was viewed as a user-friendly and secure alternative for financial transactions, as observed by Sionfou (2020). In conclusion, recognizing the dynamics of demographics, trust, security, and accessibility becomes vital for promoting effective mobile money adoption. Stakeholders should address security concerns, enhance accessibility, and build trust to foster broader adoption and financial inclusion. Understanding consumer characteristics is pivotal for making informed decisions that enhance digital financial services and overall financial inclusion. This underscores the significance of considering these aspects, as supported by ZICTA (2019), Ehiyamen et al. (2009), and Sionfou (2020).

2.13 Factors Influencing Consumers to Use Mobile Money Services

2.13.1 Availability of Mobile Money Services

Respondents were surveyed regarding the availability of mobile money credit services. Among 96 respondents, 60.42% affirmed that the services were always available, while 39.58% disagreed (Figure 3). Mobile money services are widely present in key areas of Lusaka, including markets and trading places. The prevalence of mobile phones, both smart and ordinary, further contributes to the services' availability. The digitalization of banks, linking accounts to mobile numbers through electronic wallets, has also enhanced the availability of mobile money services.

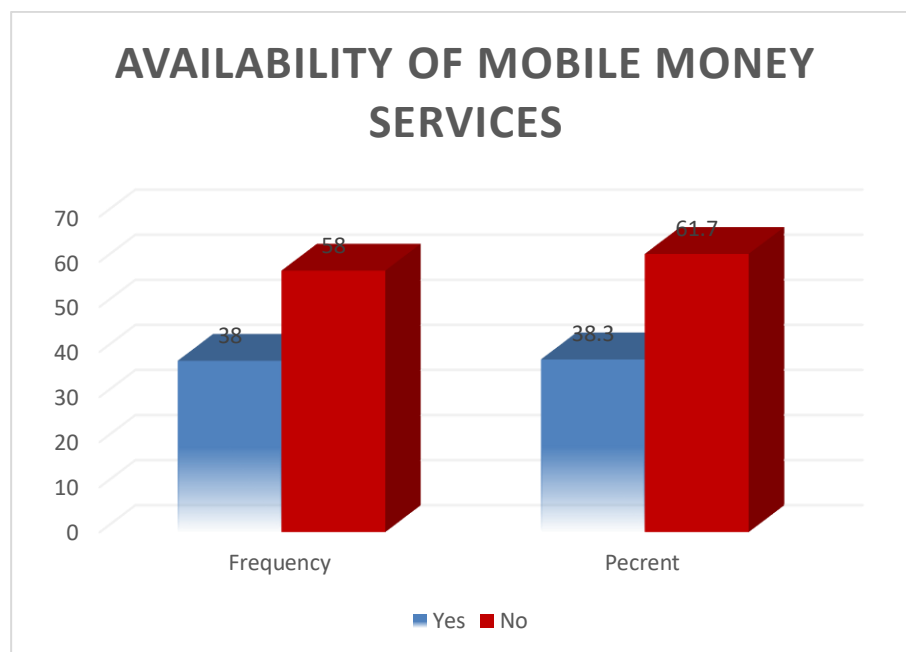


Figure 3: Influence of availability of money on use of mobile money services

Source: Researcher field work

2.13.2 Accessibility of Mobile Money Services

The study also investigated the ease of accessing credit through mobile providers. Among the respondents, 45.83% found access easy, while 54.17% did not (Figure 4).

While mobile money services are available, challenges in accessibility exist. Notably, the difference between availability and accessibility was not statistically significant, indicating that although available, access remains difficult for some (Table 3). This is often due to variations in service coverage among providers (Luka et al., 2009). Security, trustworthiness, convenience, and accessibility significantly influence customers' decisions to use mobile money services. Challenges in mobile money credit access, particularly related to fraud and transaction delays, hinder adoption. Therefore, robust security measures are essential to safeguard financial transactions and enhance user confidence. Trustworthiness is crucial for adoption, with customers seeking reliable and transparent services. Mobile money providers must demonstrate security protocols, customer support, and prompt issue resolution to foster trust.

Mobile money services offer convenience and accessibility, making them appealing to both banked and unbanked individuals. Agents' widespread network contributes to accessibility, though challenges persist, especially for certain providers (Luka et al., 2009). The perception that mobile money is safer than informal saving methods encourages adoption. The elimination of cash reduces risks, attracting security-conscious users.

Table 3: Statistical difference of influence between availability and accessibility of mobile money services

Operation of mobile money services	Proportional N (%)	CI (Low , High)	P
Availability	58 (60.4)	47.8 , 73.0	0.2540
Accessibility	52 (54.2)	40.6 , 67.7	0.7460
Difference	6 (6.2)	12.2 , 24.7	0.5080

Source: Researchers field work

Regulatory support enhances trust and plays a role in influencing adoption. Knowing that mobile money is regulated boosts customer confidence. Prior mobile communication service experience can predict mobile money adoption, providing market segmentation insights.

Mobile money services' adoption is influenced by security, trust, convenience, and accessibility factors. Addressing security concerns, emphasizing convenience, and building trust are essential for broader adoption. Regulatory support and market segmentation strategies also play roles in influencing adoption (Luka et al., 2009).

The findings resonate with prior studies. Luka et al. (2009) highlight network operators' influence on credit accessibility. Ismail et al. (2017) emphasize user expectancy and behavioural intention in mobile money adoption, with transactional costs less influential (Ismail et al., 2017). The study counters TAM assumptions, showing mobile money's distinct impact (Cheng and Yeung, 2015). Mobile money's accessibility improvements align with Adewoye (2013) and Joel (2017), offering convenience and accessibility, reducing operational costs, and attracting new users (Adewoye, 2013, Joel, 2017).

2.14 Mobile Money Non-Usage Factors

2.14.1 Lack of Trustworthiness

Surveyed respondents were asked about the trustworthiness of mobile money lending. Among 96 respondents, 43.15% believed it to be trustworthy, while 57.29% did not (Figure 5). Limited trustworthiness of mobile money services negatively affects their perceived effectiveness, particularly among older individuals and those with primary education.

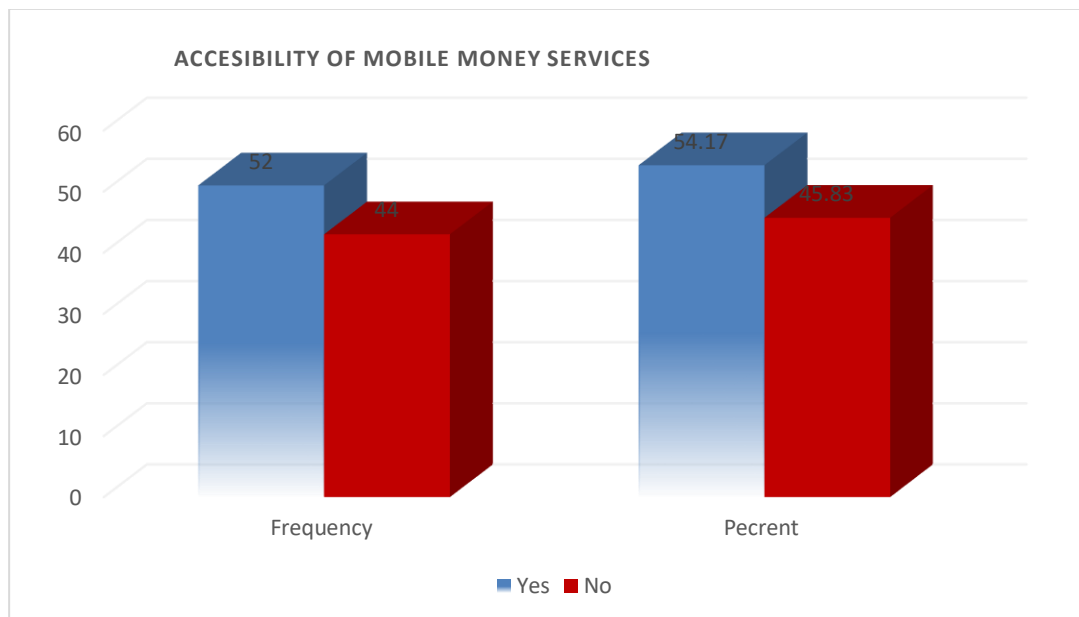


Figure 4: Accessibility and MMS

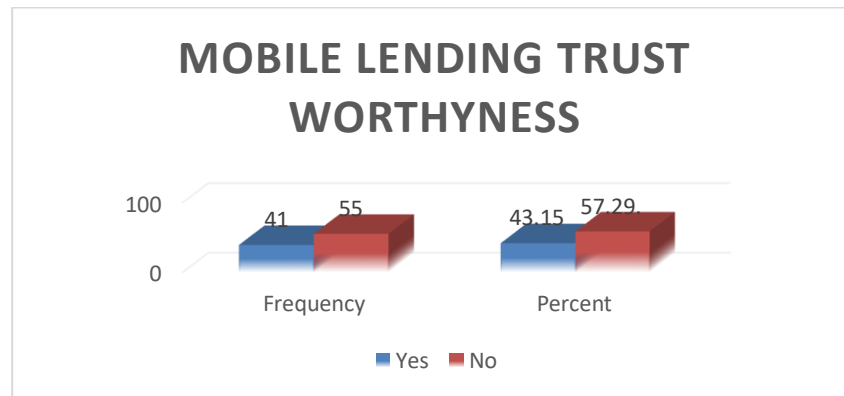


Figure 5: Mobile lending trust worthiness

Source: Researchers field work

2.14.2 Security Concerns

Respondents were also questioned about the security of mobile money services. Among 96 respondents, 46.88% perceived them as secure, while 53.13% did not (Figure 6). Similar to trustworthiness, security concerns impact the perceived effectiveness of mobile money services among older individuals and those with primary education.

For older and less educated individuals, understanding how to protect their finances within the mobile money system can be complex. Simplified communication methods through visual media are suggested for raising awareness [Citation: Researcher field work].

Fraud, security, and trustworthiness concerns significantly influence potential customers' decisions regarding mobile money services. Fraud-related challenges, like delayed transaction confirmations, can discourage adoption. Improved security measures, transparency, and regulatory support are necessary to foster confidence and encourage usage. Perceptions of security risks influence consumer purchase decisions. If mobile money services are perceived as less secure than alternatives, potential users may abstain. Addressing limited trustworthiness and security is critical. User familiarity with mobile money and previous technology usage can influence adoption.

Mobile money adoption faces obstacles due to customer concerns about fraud, security, trustworthiness, and lack of familiarity. To promote adoption, robust security measures and transparent operations are essential. Regulatory authorities' role in ensuring a safe market environment cannot be understated. By addressing these factors, user confidence can be cultivated, encouraging broader mobile money service adoption.

The findings align with Maimbo (2016), highlighting negative perceptions of new technology in Sub-Saharan regions. Customers' unfamiliarity and lack of confidence in self-service options contribute to limited adoption (Maimbo, 2016).

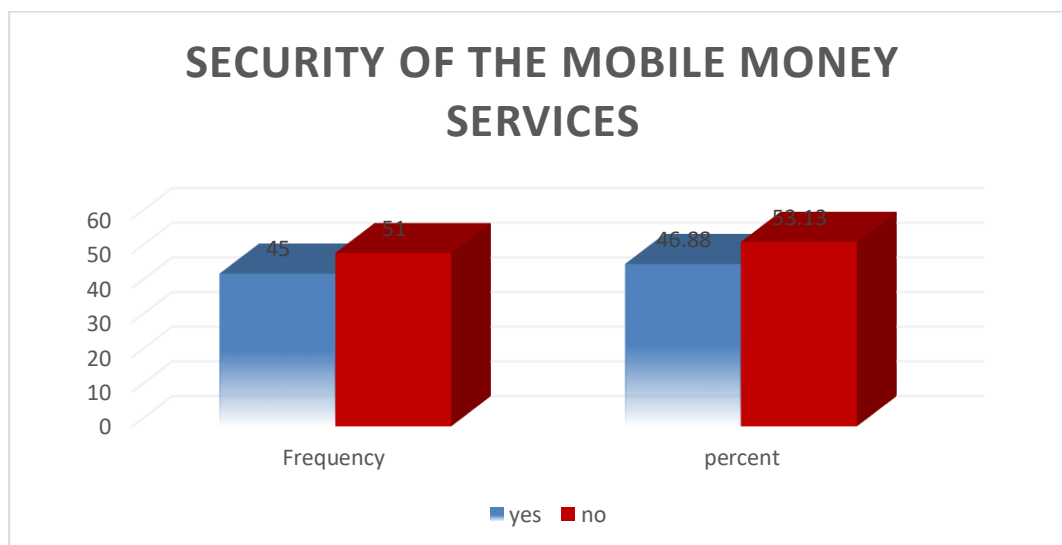


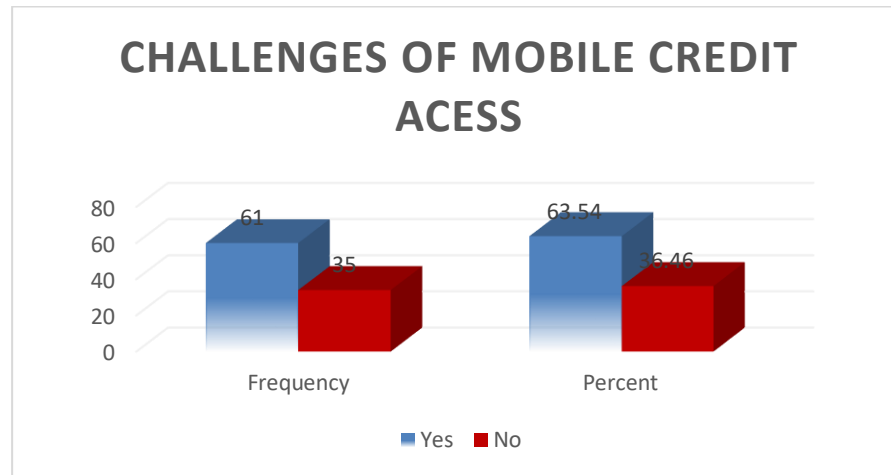
Figure 6: Security of mobile money services

Moreover, effective mobile money use is linked to higher education levels, as noted by Luan (2015). Awareness campaigns should address the lack of knowledge and concerns about security and costs (Luan, 2015, ZICTA, 2019).

2.15 Challenges Faced by Mobile Money Operators

Among 96 respondents, 63.54% stated facing challenges with mobile money credit access, while 36.46% did not (Figure 7). Fraud is a significant challenge, impacting users' confidence and prompting calls for enhanced security measures.

Figure 7: Challenges faced by mobile money operators



Source: Researchers field work

Delayed transaction confirmations also cause concern among users. Prompt feedback and updates are crucial for maintaining user trust. Users' demand for stricter regulations on new SIM card deposits stems from security fears and distrust in the regulatory environment. The high percentage of users facing challenges (63.54%) highlights the necessity of addressing security and fraud issues in the mobile money ecosystem. To counter these challenges, mobile money providers must invest in robust security measures, real-time transaction monitoring, and collaboration with regulators to establish safeguards.

Fraud, security, and delayed transaction confirmations are prominent challenges faced by users of mobile money services. Enhancing security protocols, ensuring prompt feedback, and establishing regulations on SIM card deposits are necessary to build user trust and improve the overall user experience. Collaboration between mobile money providers and regulatory bodies is vital for creating a secure and trustworthy mobile money environment.

The study findings agree with Steve (2012), emphasizing that users prioritize service system performance and personal assurance in technology use (Steve, 2012).

In essence, mobile money services offer secure and accessible financial solutions, contributing to financial inclusion and empowerment. These services prioritize robust security measures, enabling users to confidently access and manage their finances. The convenience and accessibility of mobile money services, combined with enhanced security, drive adoption and contribute to the growth of digital financial ecosystems.

The challenges highlighted align with broader concerns in technology adoption, including perceptions of risk, trustworthiness, and familiarity. Addressing these concerns is pivotal in encouraging users to embrace digital financial solutions and contribute to financial inclusion (Maimbo, 2016, Luan, 2015, ZICTA, 2019). Overall, the study underscores the importance of building trust, ensuring security, and addressing user concerns to drive adoption and realize the full potential of mobile money services in promoting financial inclusion and economic development.

III. Conclusion

The study underscores the pivotal role of demographic factors, particularly age and education, in shaping the adoption of mobile money services. Younger individuals with technological familiarity and higher education levels are more likely to embrace these services. Tailoring strategies to meet the preferences of diverse demographic segments is essential. Efforts should be concentrated on educating older individuals and those with lower education levels about the advantages and security of mobile money services. Security concerns emerge as a significant barrier to the widespread adoption of mobile money services. Users' fears of fraud, data breaches, and unauthorized access hinder adoption. To counteract these apprehensions, mobile money providers must focus on

transparent security measures, regulatory compliance, and comprehensive user education. By instilling trust in the safety of financial transactions, providers can encourage wider adoption.

The study emphasizes that limited availability and accessibility of mobile money services create barriers to utilization. This issue is particularly pertinent for populations in remote areas or with inadequate infrastructure. Collaborative efforts among stakeholders are crucial in expanding agent networks, leveraging technology, and enhancing infrastructure. By improving accessibility, mobile money services can reach a broader user base. The challenges faced by specific demographic groups, such as older individuals and those with limited education, require tailored solutions. Overcoming obstacles related to limited availability, accessibility, trustworthiness, and security demands a targeted approach. Expanding agent networks, offering digital literacy programs, and collaborating with regulatory authorities can address these challenges and create a more inclusive mobile money ecosystem.

In conclusion, the study underscores the multifaceted nature of influencing factors in the adoption and effectiveness of mobile money services. A holistic approach is necessary to foster financial inclusion and ensure the potential benefits of mobile money are accessible to all. By considering demographic nuances, ensuring security, promoting accessibility, and garnering regulatory support, stakeholders can collectively contribute to a more inclusive and secure mobile money landscape. This will empower diverse populations to participate in the digital financial ecosystem and reap its rewards.

2.15.1 IV. Recommendations

The study's recommendations aim to enhance the adoption, accessibility, trustworthiness, and security of mobile money services.

For socio-demographic characteristics and adoption, the study suggests targeted awareness campaigns using visual aids and community workshops to reach older individuals and those with lower education levels. Simplifying user interfaces, tailoring marketing messages, providing customer support, incentives, and local language assistance can also promote adoption.

Regarding factors influencing adoption, collaborating among mobile network operators is advised to expand the availability and accessibility of mobile money services. The study proposes agent network expansion, infrastructure development, and integration with traditional financial services, customer education, and the use of digital channels for promotion.

For factors abstaining customers from use, security awareness campaigns using visual aids can educate users about security features. User-friendly security measures, multi-factor authentication, timely transaction notifications, transparent data privacy policies, and continuous security updates are recommended to enhance trust.

Regarding challenges faced by mobile money operators, the study suggests government involvement and regulatory support to improve availability, accessibility, trustworthiness, and security. Compulsory sensitization campaigns using visual aids in local languages are proposed to enhance understanding and trust. Community outreach, public-private collaboration, and regulatory oversight are seen as solutions.

For future studies, the recommendation is to conduct case studies on individuals facing difficulties accessing mobile money services and the challenges mobile network providers encounter in enhancing availability and accessibility. Further studies may broaden investigations into regulatory, economic, and infrastructural aspects that can potentially impact credit access for mobile network operators. These studies can provide insights for policy and strategy development for inclusive mobile money ecosystems.

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