A study of the relationship between digital finance and financial sector growth in Zambia: A case study of Lusaka district, Zambia

Chisanga Malasa[1*]
Lubinda Haabazoka[2]

[1*]chisangamalasa@gmail.com

[1,2]The University of Zambia, Zambia

https://doi.org/10.51867/asarev.3.1.10

ABSTRACT

Digital finance has emerged as a significant force in the development of financial sectors and economic progress globally. Despite the growing adoption of fintech innovations, mobile money, and online banking services in Zambia, the extent to which digital finance contributes to the efficiency and overall growth of the financial sector remains insufficiently examined. This study investigated the relationship between digital finance and financial sector growth in Lusaka District, with specific focus on mobile money services, digital payment systems, and fintech innovations as they relate to service coverage, economic sustainability, and financial inclusion. The study was guided by the financial intermediation theory, the technology acceptance model, the diffusion of innovation theory, the endogenous growth theory, and the financial inclusion theory, which collectively provided a framework for understanding how technological innovations are adopted and how they influence financial sector development. A mixed-methods cross-sectional research design was employed, combining quantitative and qualitative approaches within a positivist research philosophy. The target population comprised individuals aged 18 years and above residing in Lusaka District who had experience using digital financial services. A sample of 150 respondents was selected using simple random sampling combined with purposive sampling to ensure the inclusion of participants with relevant digital finance experience, with the sample size determined using the Raosoft sample size formula. Primary data were collected through structured questionnaires administered face-to-face by trained enumerators. Quantitative data were analysed using descriptive statistics and Spearman rank correlation analysis with the aid of Stata and Microsoft Excel, while qualitative responses were examined through thematic analysis. The findings revealed statistically significant positive associations between mobile money services and financial sector growth, digital payment systems and financial sector growth, and fintech innovations, with digital payment systems recording the strongest association. Descriptive findings further indicated that the majority of respondents perceived digital finance as making a substantial contribution to financial sector development, improving access to financial services, and supporting personal and business financial growth. However, the study also identified key barriers limiting the full potential of digital finance, including poor internet connectivity, cybersecurity threats, high transaction fees, low financial and digital literacy and limited interoperability between digital financial platforms. The study recommends expanding digital infrastructure, strengthening regulatory and cybersecurity frameworks, reducing transaction costs, enhancing financial and digital literacy through awareness campaigns, improving the usability of digital financial applications, and fostering fintech innovation. These recommendations are directed at policymakers, financial institutions, and fintech firms seeking to leverage digital finance for inclusive and sustainable financial sector development in Zambia.

Keywords*:* Banking Innovation, Digital Finance, Digital Payment Systems, Financial Sector Growth, Financial Sector Development

I. INTRODUCTION

Technological advancements, catalysed by rapid population growth, have fundamentally reshaped trade systems and business operations, giving rise to the digital finance landscape. Rather than relying on traditional infrastructure, digital finance transforms service delivery by integrating emerging technologies into accessible consumer platforms Allen and Gale (2000). This shift utilizes diverse channels, including mobile devices, the internet, point-of-sale terminals, and automated teller machines (Organization for Economic Cooperation and Development [OECD], 2020). These services provided accessible and convenient financial solutions to underserved populations, including women, youth, and rural communities, enabling them to save, make payments, access credit, and purchase insurance (Gomber et al., 2017).

Digital banking functioned as a key component of digital finance by allowing customers to perform transactions electronically, thereby reducing reliance on physical banking processes and extending services to previously unbanked populations (World Bank, 2020). Globally, digital finance was widely adopted, particularly during the COVID-19 pandemic, where digital platforms were used for financial transactions and distribution of funds (Carstens, 2021). In Zambia, the adoption of mobile money platforms, online banking, and fintech solutions increased access to financial services, especially in rural areas (Bank of Zambia [BOZ], 2023). Despite these developments, challenges such as

inadequate digital infrastructure, low financial literacy, cybersecurity risks, and regulatory limitations were observed (Shen et al, 2025; Donovan, 2012). In addition, the relationship between digital finance and financial sector growth remained unclear, partly due to methodological limitations in previous studies.

While countries such as China, the United Kingdom, and the United States reported widespread use of digital financial technologies within their financial systems (Hasan et al., 2020; Ozili, 2018). In Zambia, the growth and effectiveness of digital financial services (DFS) face significant challenges. Many people, especially in rural and underserved areas, still experience limited access due to gaps in digital infrastructure, low financial literacy, regulatory constraints, and cybersecurity risks (BOZ, 2023) Zambia had not fully established clear empirical evidence on similar patterns. This study addressed this gap by examining the relationship between digital finance usage and financial sector growth in Lusaka District, with specific focus on mobile money services, digital payment systems, and fintech innovations. The study provided empirical evidence on the associations between these variables. The main aim of the study was to examine the relationship between digital finance and financial sector growth in Zambia, as well as to explore other aspects of digital finance that pose challenges to the growth of the financial sector, particularly in Lusaka District, in line with the main study objectives

1.1 Research Objectives

i. To examine the relationship between mobile money services and financial sector growth in Lusaka.
ii. To assess the association between digital payment systems and financial sector growth in Lusaka.
iii. To explore the link between fintech innovations and financial sector growth in Lusaka

II. LITERATURE REVIEW

The rapid advancement of digital finance has transformed the financial sector globally, particularly in developing economies. Financial systems are increasingly adopting digital solutions such as mobile money, digital payment systems, and fintech innovations to improve efficiency, accessibility, and service delivery (Goodell, 2023; International Monetary Fund [IMF], 2023).However, despite these advancements, challenges such as financial exclusion, limited access to credit, and inefficiencies in traditional banking systems persist. Many studies reveal that digital finance innovations such as mobile money services, digital payment systems, and fintech solutions are key mechanisms to improve efficiency, financial access, and sectoral growth Balyuk and Davydenko (2023). Management's ability to adopt and implement effective digital financial strategies enhances competitiveness and determines the success of financial institutions amid technological disruption and market volatility (Mishkin, 2019).

The main effort of the researcher is to collect relevant literature and research findings from different published sources, review them, analyse them, and explain how digital finance components mobile money, digital payment systems, and digital lending contribute to financial sector growth. The ongoing adoption of digital financial solutions, coupled with challenges such as cybersecurity risks, limited digital literacy, and regulatory gaps, continues to put pressure on financial institutions to innovate and respond effectively to market needs. Some of the key studies examining the role of digital finance in promoting financial access and supporting sector growth are summarized here.

2.1 Theoretical Review

The evolution of digital finance within Zambia's financial sector is anchored in a multifaceted theoretical landscape that bridges institutional efficiency, technological adoption, and macroeconomic growth. By synthesizing Financial Intermediation Theory, the Diffusion of Innovation (DOI), and the Technology Acceptance Model (TAM), this study examines the mechanisms through which digital platforms disrupt traditional banking constraints. Furthermore, the integration of Financial Inclusion and Endogenous Growth theories provides a macro-level lens to evaluate how digitized financial services catalyze poverty reduction and sustainable economic expansion in the Lusaka District. Together, these frameworks offer a robust basis for analyzing the transformative impact of fintech on the accessibility and efficiency of Zambia's modern financial ecosystem.

2.1.1 Financial Intermediation Theory

Financial Intermediation Theory posits that institutions bridge the gap between savers and borrowers by minimizing transaction costs and information asymmetry (Gurley & Shaw, 1960). While traditional banks historically dominated this space, digital finance has revolutionized the intermediation process in Zambia through mobile money and digital wallets. In the Lusaka District, these innovations bypass physical infrastructure constraints, enhancing credit accessibility and financial transparency (BOZ, 2023). By accelerating fund transfers and reducing cash dependency, digital platforms foster capital accumulation and integrate previously excluded small enterprises into the formal economy.

2.1.2 Diffusion of Innovation (DOI) Theory

The Diffusion of Innovation Theory explains the process through which technological advancements gain momentum and spread through social systems over time (Rogers, 2003). In Zambia, the adoption of digital financial services (DFS) follows a predictable trajectory: initially concentrated among tech-savvy urban populations in Lusaka, then gradually permeating rural and informal sectors as mobile network coverage expands (BOZ, 2023). The rate of adoption is largely dictated by perceived relative advantage and the mitigation of "laggard" concerns, such as cybersecurity risks and low digital literacy.

2.1.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) suggests that user adoption is primarily driven by perceived usefulness and perceived ease of use (Davis, 1989). In the Zambian context, usefulness is demonstrated by the ability of mobile platforms to provide 24/7 access to credit and payments in remote or congested urban areas. Conversely, ease of use is often hindered by complex registration protocols or high transaction fees. For policymakers in Lusaka, TAM highlights that improving user-friendly interfaces and consumer trust is as critical to financial inclusion as the underlying technology itself.

2.1.4 Financial Inclusion Theory

Financial Inclusion Theory emphasizes providing affordable, accessible financial services to marginalized populations to catalyze poverty reduction and economic participation (Beck et al., 2007). In Zambia, digital finance serves as a critical tool for overcoming traditional barriers like high banking fees and the "brick-and-mortar" requirements of commercial banks. By leveraging mobile wallets and agent banking, digital finance empowers vulnerable groups including women and informal traders in peri-urban Lusaka to manage economic shocks and build secure savings (World Bank, 2020).

2.1.5 Endogenous Growth Theory

Endogenous Growth Theory argues that long-term economic expansion is driven by internal factors such as human capital, innovation, and knowledge (Romer, 1990). Digital finance acts as an endogenous driver for Zambia by optimizing financial market efficiency and lowering the cost of doing business. When fintech platforms facilitate entrepreneurial activity and job creation in Lusaka, they contribute to a self-sustaining cycle of economic productivity. Thus, strengthening regulatory frameworks and digital infrastructure is not merely a technical upgrade but a foundational requirement for sustainable national growth.

2.2 Empirical Review

Several studies have examined the role of digital finance in promoting financial access and supporting sector growth. Arner et al. (2016) defined digital finance as the provision of financial services through digital platforms including mobile banking, digital payments, and fintech innovations, and highlighted that digital finance improves efficiency by reducing transaction costs and increasing transaction speed. Early empirical syntheses established a strong positive link between financial development and growth (Levine, 2005). Similarly, Demirgüç-Kunt et al. (2018) found that digital finance enhances financial access, particularly in developing economies, by lowering barriers associated with traditional banking systems. However, these studies provide primarily conceptual understanding and do not empirically examine the relationship between digital finance and financial sector growth.

Regarding mobile money services, Jack and Suri (2016) conducted a study in Kenya and found that mobile money significantly improved access to financial services for previously unbanked households, contributing to poverty reduction with approximately 194,000 households moving above the poverty line, and also enhanced women's participation in financial decision-making. Studies by Ouma et al (2017) and Mago and Chitokwindo (2014) in Uganda and Zimbabwe similarly found that mobile banking expanded financial access, improved transaction security, and reduced reliance on traditional banking institutions. These studies demonstrate the importance of mobile money in promoting financial inclusion across African countries, though they do not sufficiently address broader contributions to financial sector growth. Similarly, Mbiti and Weil (2011) show that mobile financial services reduce transaction costs and improve access to financial services for previously unbanked populations.

On digital payment systems, Shen et al. (2025) and Park and Mercado (2018) found that digital payment systems improve financial inclusion by reaching low-income populations and reducing income inequality in Asian economies. In Sub-Saharan Africa, Myovella et al. (2020) found that digital payment systems support economic activities, especially among small and medium-sized enterprises and informal sector participants. However, these studies do not specifically examine how digital payment systems influence financial sector growth at a macro level, creating a gap that this study seeks to address. Concerning fintech innovations, Philippon (2019) found that the use of big data and machine learning has transformed traditional lending systems by enabling alternative credit assessment methods and improving access to credit for individuals and businesses previously excluded from formal financial systems. In the Zambian context, BOZ

(2023) found that digital lending platforms such as Zamcash, MTN MoMo, and Airtel Money have improved access to credit for micro, small, and medium-sized enterprises and further found that digital lending contributes to financial deepening. Despite these benefits, the World Bank (2020) reported that digital lending platforms often charge high interest rates, which may negatively affect low-income borrowers, indicating that fintech benefits must be balanced with appropriate consumer protection.

Studies focusing specifically on Zambia, including Chibesa and Mwange (2025) and Nyika (2024) found that the adoption of digital financial services is constrained by cybersecurity risks, low digital literacy, and limited awareness. The United Nations Capital Development Fund highlighted the role of digital finance in improving financial access and emphasized the importance of partnerships and innovation in promoting financial inclusion (United Nations Capital Development Fund [UNCDF], 2020). However, none of these studies provide empirical evidence on how digital finance contributes specifically to financial sector growth in Zambia, which this study addresses. Despite the potential benefits of digital finance, several challenges limit its widespread adoption. One major challenge is inadequate digital infrastructure, including unreliable internet connectivity and limited network coverage in some regions. These limitations reduce the accessibility and reliability of digital financial services. Cybersecurity threats also pose risks to digital financial systems. According to Kshetri (2016), digital financial platforms are increasingly vulnerable to fraud, hacking, and data breaches.

While infrastructure expansion has reduced the global coverage gap to just 5%, the Global System for Mobile Communications Association [GSMA] (2022) identifies a persistent 'usage gap' affecting 3.2 billion people. This disparity is primarily driven by structural barriers in affordability, where the cost of entry-level internet-enabled devices remains a significant hurdle for the bottom 20% of earners in developing economies, effectively stalling the transition from basic mobile money to a fully integrated digital financial ecosystem. As Lusardi and Mitchell (2023) suggest, without the requisite financial literacy, users remain unable to translate digital access into long-term economic security.

III. METHODOLOGY

3.1 Research Design

This study adopted a mixed-methods research design that integrated both quantitative and qualitative approaches within a cross-sectional framework. The cross-sectional design enabled data to be collected at a single point in time, making it possible to capture current trends, perceptions, and user experiences regarding digital financial services in Lusaka District. The study was underpinned by a positivist research philosophy, which emphasizes objective measurement, statistical analysis, and the systematic examination of relationships between variables. This philosophical orientation was appropriate given the study's aim of establishing empirical associations between digital finance variables and financial sector growth. A survey research design was specifically adopted to facilitate the collection of comprehensive primary data from a large number of respondents in a structured and consistent manner.

3.2 Study Area

The study was conducted in Lusaka District, the capital and most commercially active district of Zambia. Lusaka District was selected as the study area because it serves as the country's financial hub, hosting the majority of banks, mobile money agents, fintech firms, and digital financial service providers in Zambia. The district also has a relatively higher concentration of digital financial service users compared to other parts of the country (Zambia Information and Communications Technology Authority [ZICTA], 2023), making it an appropriate setting for examining the relationship between digital finance and financial sector growth. Data was collected across selected locations within Lusaka District through face-to-face administration of questionnaires.

3.3 Target Population

The target population for this study comprised individuals aged 18 years and above residing in Lusaka District who had experience using digital financial services. This population was considered appropriate because adults aged 18 and above are of legal age to engage in financial transactions and are the primary users of digital financial services such as mobile money, online banking, and digital payment platforms. The inclusion of individuals with direct experience using digital financial services ensured that respondents were able to provide informed and relevant responses regarding the adoption, usage, and impact of digital finance on the financial sector.

3.4 Sampling and Sample Size

The study employed simple random sampling combined with purposive sampling to select study participants. Simple random sampling was used to ensure that every eligible individual within the defined population had an equal chance of being selected, thereby minimizing selection bias and enhancing the representativeness of the sample. Purposive sampling was applied alongside simple random sampling to ensure that selected respondents had relevant and direct experience with digital financial services, which was essential for addressing the study's research objectives. A

sample size of 150 respondents was determined using the Raosoft sample size formula, which ensured statistical adequacy and provided a sufficient basis for generating reliable quantitative findings Creswell and Creswell (2018).

3.5 Data Collection Tools and Procedure

The primary data collection instrument was a structured questionnaire with some semi-structured elements. The structured component consisted of closed-ended questions designed to collect quantitative data on respondents' demographic characteristics, patterns of digital financial service usage, and perceptions regarding the contribution of digital finance to financial sector growth. The semi-structured component included open-ended questions that allowed respondents to provide qualitative insights into their experiences, challenges, and views on the adoption of digital financial services. Data collection was conducted through face-to-face administration of questionnaires by trained enumerators across selected locations within Lusaka District. The use of trained enumerators ensured consistency in questionnaire administration and helped to clarify any questions that respondents may have found unclear, thereby improving the quality and completeness of the data collected.

3.6 Data Analysis

Quantitative data collected through the structured questionnaires were analyzed using STATA statistical software and Microsoft Excel. Descriptive statistics were generated to summarize the demographic and socio-economic characteristics of respondents as well as their patterns of digital financial service usage. Spearman rank correlation analysis was employed to examine the relationships between the independent variables mobile money services, digital payment systems, and fintech innovations and the dependent variable, which was financial sector growth in Lusaka District. Spearman's correlation was selected because of the ordinal nature of the variables measured through Likert-scale responses. Microsoft Excel was used to generate graphs and tables to visually present descriptive findings. Qualitative data obtained from the open-ended questions were analyzed using thematic analysis, which involved identifying, organizing, and interpreting recurring patterns and themes across respondents' responses. The qualitative findings were used to complement and enrich the quantitative results, providing deeper contextual understanding of the adoption and impact of digital financial services.

3.7 Ethical Concerns

Ethical considerations were strictly adhered to throughout the data collection process. Prior to participation, all respondents were provided with information about the purpose of the study and were required to give their informed consent before taking part. Participation in the study was entirely voluntary, and respondents were free to withdraw at any point without any consequences. Confidentiality of respondents' information was maintained throughout the study, and no personally identifiable information was disclosed in the reporting of findings. The anonymity of respondents was protected by ensuring that questionnaire responses were reported in aggregate form rather than at the individual level. These ethical safeguards were applied in accordance with established research ethics principles to ensure the integrity of the research process and the protection of participants' rights and welfare.

IV. FINDINGS & DISCUSSION

4.1. Findings

Table 1 presents the demographic and socio-economic characteristics of the respondents. The majority were female (58%), with males accounting for 42%. Most respondents were within the 26–35 (37%) and 36–45 (31%) age groups. A large proportion had attained tertiary education (79%), while fewer had secondary (16%), primary (4%), or no formal education (1%). In terms of income, most were formally employed (57%), followed by self-employed (18%), unemployed (14%), and informal sector workers (11%). The findings further show high financial inclusion, with 89% owning bank accounts and all respondents (100%) having mobile money accounts

Table 1

Demographic and Socio-Economic Characteristics of Respondents (N = 150)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	63	42%
	Female	87	58%
Age Group (Years)	18–25	28	19%
	26–35	55	37%
	36–45	46	31%
	46–55	15	10%
	56+	6	4%
Education Level	No Formal Education	2	1%
	Primary Education	6	4%
	Secondary Education	24	16%
	Tertiary Education	118	79%
Source of Income	Formally Employed	86	57%
	Self-Employed	27	18%
	Informal Sector	16	11%
	Unemployed	21	14%
Bank Account Ownership	Yes	134	89%
	No	16	11%
Mobile Money Ownership	Yes	150	100%
	No	0	0%

*Response rate 100%

4.1.1 Relationship between Mobile Money Services and Financial Sector Growth

The study examined the relationship between mobile money services and financial sector growth in Lusaka District. The results in Table 2 reveal a positive and statistically significant relationship ($\rho = 0.62$, $p = 0.003$), indicating a moderately strong positive association. This suggests that higher levels of mobile money adoption were associated with increased indicators of financial sector growth within the district.

Table 2

Relationship between Mobile Money Services and Financial Sector Growth

Independent Variables	Dependent Variable	Correlation Coefficient (ρ)	P-value
Mobile Money Services	Financial Sector Growth (Lusaka District)	0.62	0.003

These findings are consistent with Jack and Suri (2016), who found that mobile money services in Kenya significantly improved financial inclusion by enabling previously unbanked households to access financial services, enhancing economic participation and household welfare. Studies by Ouma et al. (2017) and Mago and Chitokwindo (2014) similarly reported that mobile banking platforms in several African countries expanded access to financial services for low-income populations, thereby strengthening financial markets. From a theoretical perspective, the results align with Financial Intermediation Theory (Gurley & Shaw, 1960), which emphasizes the role of financial intermediaries in facilitating efficient resource allocation. Mobile money platforms function as alternative financial intermediaries that reduce transaction costs and improve the efficiency of financial service delivery, thereby contributing to financial sector growth. The findings also align with the Diffusion of Innovation Theory (Rogers, 2003) and the Technology Acceptance Model (Davis, 1989), which explain how technological innovations spread and are adopted within societies as their perceived usefulness and ease of use increase.

4.1.2 Association between Digital Payment Systems and Financial Sector Growth

The study examined the association between digital payment systems and financial sector growth in Lusaka District. Table 3 indicates a strong positive and statistically significant association ($\rho = 0.71$, $p = 0.000$), representing the strongest correlation among all three digital finance variables examined in this study.

Table 3

Association between Digital Payment Systems and Financial Sector Growth

Independent Variables	Dependent Variable	Correlation Coefficient (ρ)	P-value
Digital Payment Systems	Financial Sector Growth (Lusaka District)	0.71	0.000

These findings are consistent with Shen et al. (2025) and Park and Mercado (2018), who found that digital

payment systems improve financial inclusion by reaching low-income populations and reducing income inequality. Myovella et al. (2020) similarly observed that digital financial technologies contribute to economic activity by facilitating business transactions, particularly for small and medium-sized enterprises. From a theoretical perspective, the findings align with the Technology Acceptance Model (Davis, 1989), which posits that adoption of technology depends largely on perceived usefulness and ease of use. Digital payment systems such as mobile wallets, electronic transfers, and online payment platforms offer convenience, speed, and accessibility, which drives broader participation in the financial system. The findings also support Financial Inclusion Theory (Beck et al., 2007), as digital payment systems reduce traditional barriers to financial services such as long distances to banking institutions, high transaction costs, and strict account requirements.

4.1.3 The Link between Fintech Innovations and Financial Sector Growth

The study examined the link between fintech innovations and financial sector growth in Lusaka District. Table 4 reveals a positive and statistically significant relationship ($\rho = 0.48$, $p = 0.045$), indicating a moderate positive association. The moderate strength of this relationship compared to the other two variables suggests that fintech innovations, while contributing positively, are still at an earlier stage of diffusion and mainstream integration in Lusaka's financial sector.

Table 4

The Link between Fintech Innovations and Financial Sector Growth

Independent Variables	Dependent Variable	Correlation Coefficient (ρ)	P-value
Fintech Innovation	Financial Sector Growth (Lusaka District)	0.48	0.045

These findings are consistent with Shen et al. (2025) and Park and Mercado (2018), who found that digital payment systems improve financial inclusion by reaching low-income populations and reducing income inequality. Myovella et al. (2020) similarly observed that digital financial technologies contribute to economic activity by facilitating business transactions, particularly for small and medium-sized enterprises. From a theoretical perspective, the findings align with the Technology Acceptance Model (Davis, 1989), which posits that adoption of technology depends largely on perceived usefulness and ease of use. Digital payment systems such as mobile wallets, electronic transfers, and online payment platforms offer convenience, speed, and accessibility, which drives broader participation in the financial system. The findings also support Financial Inclusion Theory (Beck et al., 2007), as digital payment systems reduce traditional barriers to financial services such as long distances to banking institutions, high transaction costs, and strict account requirements.

4.2 Descriptive Findings on Digital Finance Adoption and Impact

Table 5

Perceived Contribution of Digital Finance

Level of Contribution	Frequency	Percentage
Very High	65	43.3%
High	38	25.3%
Moderate	43	28.7%
Low	4	2.7%

The results in table 5 show that digital finance has made a notable contribution to the growth of Lusaka's financial sector. Specifically, 43.3% (65 respondents) rated its contribution as very high, while 25.3% (38 respondents) considered it high. In comparison**,** 28.7% (43 respondents) perceived the impact as moderate, and only 2.7% (4 respondents) indicated that the contribution of digital finance was low. This pattern suggests that digital financial services are widely perceived as an important component in the functioning of the financial sector. This observation is consistent with the work of Donovan (2012), who argues that financial technology has transformed financial intermediation by expanding access to financial services and increasing efficiency in financial transactions.

Table 6

Impact on Financial Inclusion

Impact Level	Frequency	Percentage
Significant influence	77	51.3%
Moderate influence	58	38.7%
No noticeable effect	15	10%

Regarding financial inclusion, 51.3% (77 respondents) indicated that digital financial services have significantly influenced financial inclusion in Lusaka District, while 38.7% (58 respondents) acknowledged that the impact was present but limited to certain groups. However, 10% (15 respondents) stated that digital finance had no noticeable effect on financial inclusion. For instance, Jack and Suri (2016), found that mobile money services significantly increase financial inclusion by enabling users to send, receive, and store money without requiring a traditional bank account. Similarly, Mbiti and Weil (2011) observed that mobile money platforms play a critical role in integrating unbanked populations into formal financial systems due to the low cost of service they have. These responses imply that digital financial platforms may play an important role in expanding access to financial services.

Table 7

Future Growth Potential of Digital Finance

Response	Frequency	Percentage
Strongly Agree	68	45.3%
Agree	61	40.7%
Neutral	19	12.7%
Disagree	2	1.3%

The findings also revealed optimism regarding the future growth potential of digital finance. A total of 45.3% (68 respondents) strongly agreed that digital finance would sustain financial growth in Lusaka's financial sector, while 40.7% (61 respondents) agreed. Additionally, 12.7% (19 respondents) remained neutral, and only 1.3% (2 respondents) disagreed. This outlook suggests a generally positive perception of digital finance as a driver of future sector development. Regarding future growth potential (Table 7), 45.3% strongly agreed and 40.7% agreed that digital finance would sustain financial sector growth, reflecting strong optimism consistent with Endogenous Growth Theory (Romer, 1990).

Table 8

Frequency of Use of Digital Financial Services

Frequency of Use	Frequency	Percentage
Daily	104	69.3%
Weekly	40	26.7%
Monthly	5	3.3%
Rarely	1	0.7%

In terms of usage, digital financial services are widely adopted in Lusaka District. The results indicate that 69.3% (104 respondents) use digital financial services daily, 26.7% (40 respondents) use them weekly, 3.3% (5 respondents) use them monthly, and 0.7% (1 respondent) reported rarely using these services. Such patterns indicate a high level of reliance on digital financial platforms among users. Table 8 shows that 69.3% of respondents use digital financial services daily and 26.7% weekly, indicating high levels of adoption consistent with the Technology Acceptance Model (Davis, 1989).

Table 9

Most Utilized Digital Financial Services

Digital Service	Frequency	Percentage
Mobile Money	60	40%
Mobile Money + Online Banking	45	30%
Other (Digital Wallets / Online Banking alone)	45	30%

Mobile money emerged as the most utilized digital financial service, accounting for 40% (60 respondents), followed by the combined use of mobile money and online banking at 30% (45 respondents). Other digital services such as digital wallets and online banking alone were used by a smaller proportion of respondents. Mobile money was the most utilised service at 40% (Table 9), followed by combined mobile money and online banking at 30%, consistent with findings from Ouma et al. (2017) on mobile money's centrality in African financial inclusion.

Table 10

Improvement in Access to Financial Services

Response	Frequency	Percentage
Yes – Access Improved	136	90.7%
Unsure	7	4.7%
No – Access Not Improved	7	4.7%

The findings further show that 90.7% (136 respondents) agreed that digital finance has improved access to financial services in Lusaka District. In contrast, 4.7% (7 respondents) were unsure, while 4.7% (7 respondents) indicated that digital finance had not improved access to financial services. Table 10 shows that 90.7% of respondents agreed that digital finance has improved access to financial services, supporting the argument by Ozili (2018) that digital financial services reduce transaction costs and enable more convenient access to financial services.

Table 11

Improvement in Access to Financial Services

Response	Frequency	Percentage
Yes – Financial Growth	109	72.5%
Unsure	21	14.1%
No – Financial Growth	20	13.4%

72.5% (109 respondents) reported that digital financial services have helped them grow their finances. However, 14.1% (21 respondents) were unsure about this effect, while 13.4% (20 respondents) stated that digital services had not contributed to their financial growth. This pattern suggests that digital financial services may support financial management and economic participation for many users. Table 11 shows that 72.5% of respondents reported that digital financial services helped them grow their personal or business finances, aligning with Endogenous Growth Theory (Romer, 1990) and Levine (2005), which link financial development to economic productivity.

Table 12

Challenges Facing Digital Finance Adoption

Challenge	Frequency	Percentage
Poor internet connectivity	38	25.2%
Cybersecurity threats	30	19.7%
Low financial literacy	29	19.5%
High transaction fees	29	19.2%
Lack of trust in digital systems	25	16.5%

Despite the positive associations identified, several barriers were found to limit effective adoption and use of digital financial services. As shown in Table 12, poor internet connectivity was the most frequently cited challenge (25.2%), followed by cybersecurity threats (19.7%), low financial literacy (19.5%), high transaction fees (19.2%), and lack of trust in digital systems (16.5%). These findings correspond with Kshetri (2016) and the World Bank (2020), who identify infrastructure limitations, cybersecurity risks, and limited digital literacy as major obstacles to digital financial services expansion in developing economies.

4.3 Thematic Findings

Thematic analysis of qualitative responses identified eight key themes. Tables 13 to 20 present illustrative participant views for each theme.

Table 13

Improving Digital Infrastructure

Key Issues	Illustrative Views from Participants
Poor and unstable internet connectivity, especially in rural areas	"The government needs to allocate funds towards expanding internet connectivity… people in remote areas need to travel extensive distances to reach signal-stable areas…"
High cost of internet data	"Real digital transaction affordability improves when the internet service costs decrease. People from low-income backgrounds face challenges with data bundle expenses…"
Failed transactions and delays due to weak network	"Strong network connectivity is required for users to avoid frustration when performing mobile transactions… delays cause financial losses…"

Participants consistently identified poor and unstable internet connectivity, particularly in rural and peri-urban areas, as a major barrier to the use of digital financial services. Many reported that weak network coverage leads to failed transactions and financial losses, while the high cost of data bundles places digital finance beyond the reach of low-income users. These findings directly relate to all three research objectives, as inadequate infrastructure constrains the adoption of mobile money services, digital payment systems, and fintech innovations alike. The findings are consistent with Myovella et al. (2020), who found that digital infrastructure is a critical determinant of the relationship between digitalisation and economic growth in Sub-Saharan Africa. Similarly, the GSMA (2022) identified network coverage gaps and data affordability as primary structural barriers limiting the expansion of mobile financial services across developing economies. From a theoretical perspective, these findings are explained by the Diffusion of Innovation Theory (Rogers, 2003), which holds that the rate of adoption of technological innovations is significantly constrained when the enabling infrastructure is inadequate or inaccessible.

Table 14

Strengthening Regulatory Frameworks

Key Issues	Illustrative Views from Participants
Weak monitoring systems	"Better digital transaction monitoring regulations should exist to stop fraud… people have lost their savings due to unauthorized withdrawals…"
Fraud and cyber threats	"People reject mobile money services because they are concerned about encountering scams… less tech-savvy users become targets…"
Limited fund recovery mechanisms	"The detection of fraudulent transactions occurs only after victims report them, but by then funds are usually unrecoverable…"

Participants raised serious concerns about weak monitoring systems, the prevalence of fraud and cyber threats, and the absence of effective mechanisms for recovering funds lost to fraudulent transactions. These regulatory and security gaps reduce trust in digital financial services and discourage adoption, which directly moderates the relationship between digital finance and financial sector growth identified in Objectives 1, 2, and 3. These findings are consistent with Ozili (2018), who argues that weak regulatory frameworks undermine confidence in digital financial systems and limit their potential to promote financial inclusion and sector growth. The World Bank (2020) similarly notes that digital financial platforms in developing economies are increasingly targeted by cyber threats due to weaknesses in regulatory oversight. In Zambia, the Bank of Zambia (2023) has introduced Know Your Customer requirements and consumer protection measures, but participant responses suggest that gaps in enforcement and monitoring remain. Beck et al. (2007) emphasized that effective regulation is foundational to building trust in financial systems, a condition that remains partially unmet in the Lusaka digital finance ecosystem.

Table 15

Enhancing Financial Literacy

Key Issues	Illustrative Views from Participants
Limited awareness of digital finance	"Many people don't fully understand digital finance; there should be nationwide awareness campaigns…"
Fear of scams and errors	"Some have heard stories of people losing money due to scams or system errors, and without proper knowledge, they avoid digital finance altogether."
Low digital literacy in rural areas and among elderly	"Many elderly individuals do not know how to send money via mobile phones and must depend on younger relatives to help them."

The thematic findings reveal that limited awareness of how digital finance operates, fear of scams and transaction errors, and low digital literacy among elderly and rural populations significantly reduce confidence in and adoption of digital financial services. These findings are directly relevant to all three research objectives because low literacy levels constrain the uptake of mobile money services, limit effective use of digital payment systems, and slow the adoption of fintech innovations. This is consistent with Lusardi and Mitchell (2023), who found that financial literacy is a crucial enabler of financial inclusion, and with Jack and Suri (2016), who noted that the effective utilization of mobile money depends on users' understanding of digital financial tools. The Technology Acceptance Model (Davis, 1989) supports these findings by explaining that perceived ease of use is a critical factor in technology adoption when users lack the knowledge to navigate digital platforms confidently, perceived ease of use diminishes, and adoption rates remain low.

Table 16

Reducing Transaction Costs

Key Issues	Illustrative Views from Participants
High transaction and withdrawal fees	"Transaction charges for mobile money and online banking are too high; the government should regulate fees…"
Preference for cash due to costs	"Many people opt for cash transactions simply because it is cheaper… high fees reduce the amount the recipient actually gets."
Limited adoption among low-income individuals	"For people earning daily wages or running small businesses, every kwacha counts… high costs discourage digital finance usage."

Participants reported that high transaction and withdrawal fees associated with mobile money and online banking services discourage use and drive many users, particularly low-income earners and small business operators, back to cash-based transactions. This finding has direct implications for Objectives 1 and 2, as high costs reduce the volume and frequency of mobile money and digital payment transactions, thereby weakening their association with financial sector growth. These results support Mbiti and Weil (2011), who found that although mobile money improves financial access, high transaction costs reduce its attractiveness to low-income users. The GSMA (2022) similarly identifies transaction costs as a persistent barrier to digital financial service adoption in developing economies. Addressing this barrier through regulatory fee standardization would strengthen the contribution of digital payment systems and mobile money to financial sector growth in Lusaka.

Table 17

More Secure Digital Platforms

Key Issues	Illustrative Views from Participants
Fraud and hacking concerns	"I would like to see multi-factor authentication for digital transactions to prevent fraud… people have lost their entire savings…"
Unauthorized access to accounts	"Stronger security measures, like biometric verification, should be introduced in digital finance."
Low trust in digital platforms	"More people would use digital finance if they felt their money was safe… real-time fraud alerts would boost confidence."

Participants expressed strong concerns about fraud, hacking, and unauthorized access to digital financial accounts, and called for the introduction of stronger security measures such as multi-factor authentication, biometric verification, and real-time fraud alerts. These security concerns reduce trust in digital platforms and directly moderate the relationship between all three digital finance variables and financial sector growth, as users who do not trust the safety of digital platforms are unlikely to adopt or continue using them. These findings align with Kshetri (2016), who identifies cybersecurity threats as one of the most significant challenges facing digital financial systems globally, and with who highlight data privacy and security as key concerns in the digital lending ecosystem. Strengthening platform security is therefore not only a technical requirement but a prerequisite for realizing the full potential of digital finance as a driver of financial sector growth.

Table 18

Digital Loan and Credit Facilities

Key Issues	Illustrative Views from Participants
Strict banking requirements for loans	"Many small-scale traders struggle because banks often require collateral and extensive paperwork…"
Limited access to capital for entrepreneurs	"Access to digital loans would help businesses grow and expand… young entrepreneurs cannot start businesses due to lack of capital."
Need for flexible repayment terms	"More digital lending services should be introduced, with fair interest rates and flexible repayment plans…"

Participants highlighted that strict banking requirements such as collateral and extensive documentation exclude many individuals and small businesses from accessing credit and expressed strong interest in digital lending platforms that offer more flexible, accessible, and affordable financing options. This theme is most directly relevant to Objective 3, which examines the link between fintech innovations and financial sector growth. These findings are consistent with Philippon (2019), who found that fintech innovations have transformed credit markets by enabling alternative data-driven credit assessments that extend credit to previously excluded borrowers. However, the World Bank (2020) cautions that digital lending platforms often charge high interest rates, which may negate their inclusive benefits, suggesting the need for regulatory oversight of digital credit products.

Table 19

Interoperability between Financial Services

Key Issues	Illustrative Views from Participants
Difficulty transferring funds across platforms	"There should be better integration between mobile money services and banks to ease transfers… the process is slow and sometimes fails."
High cross-network transaction costs	"Digital wallets should allow transactions across different service providers without extra charges…"
Reliance on cash due to poor interoperability	"I find it frustrating when I can't transfer money between different mobile money networks easily…"

Participants reported significant frustration with the difficulty of transferring funds between different mobile money networks and banking systems, noting that poor interoperability leads to failed transactions, additional charges, and a reliance on cash. This barrier is directly relevant to Objectives 1 and 2, as limited interoperability reduces the utility of both mobile money services and digital payment systems, thereby constraining their contribution to financial sector growth. These findings correspond with the GSMA (2022), which identifies interoperability as a key barrier to the efficient functioning of digital financial ecosystems in developing countries, and with Mbiti and Weil (2011), who note that fragmented digital financial platforms reduce convenience and discourage adoption. Improved interoperability between mobile money providers, banks, and fintech platforms would strengthen the digital financial ecosystem and enhance the associations between digital finance and financial sector growth identified in this study.

Table 20

User-Friendly Mobile Applications

Key Issues	Illustrative Views from Participants
Complicated app interfaces	"The current mobile banking apps are too complicated for some users… apps should have simpler layouts with larger buttons and clear instructions."
Limited guidance for new users	"Some people avoid digital banking because they find the apps confusing… a beginner-friendly mode or in-app tutorials would help."
Barriers for elderly and low-literacy users	"More user-friendly interfaces will encourage more people to use digital financial services… especially older adults and first-time users."

Participants indicated that complicated application interfaces, lack of in-app guidance, and absence of beginner-friendly modes discourage adoption, particularly among elderly users and those with limited digital literacy. Poor usability reduces the perceived ease of use of digital financial applications, which is a central determinant of adoption according to the Technology Acceptance Model (Davis, 1989). This theme is relevant to all three objectives, as usability challenges constrain the adoption of mobile money platforms, digital payment systems, and fintech applications across all user segments. Rogers' Diffusion of Innovation Theory (2003) further supports these findings by explaining that innovations are more likely to be adopted when they are simple to use and clearly demonstrate benefits to users. Designing inclusive, user-friendly digital financial applications is therefore an important strategy for improving adoption rates and strengthening the contribution of digital finance to financial sector growth in Lusaka District.

4.4 Discussion

This study examined the role of digital financial services in promoting financial sector growth in Lusaka District, focusing on mobile money services, digital payment systems, and fintech innovations. The findings revealed significant positive relationships between these digital finance components and financial sector growth. Mobile money services showed a moderately strong positive association with financial sector development, suggesting that increased adoption of mobile-based financial platforms enhances financial participation and transaction activity. These findings are consistent with previous studies indicating that mobile money expands financial inclusion by enabling previously unbanked populations to access financial services and participate in formal financial systems (Jack & Suri 2016; Ouma et al., 2017). Similarly, digital payment systems demonstrated a strong positive association with financial sector growth, indicating that electronic payment platforms improve transaction efficiency and increase engagement with financial services (Park & Mercado, 2018; Haider, 2018). The study also found a positive but moderate relationship between fintech innovations and financial sector growth, suggesting that technological advancements contribute to financial system development by improving service delivery and expanding access to financial products (Ozili, 2018; Romer, 1990).

Descriptive findings further revealed that most respondents perceive digital financial services as significantly improving financial inclusion, with mobile money identified as the most frequently used platform. Participants also reported that digital finance has improved access to financial services and supported personal and business financial growth. However, several challenges affecting adoption were identified, including poor internet connectivity, cybersecurity risks, high transaction costs, limited digital literacy, and interoperability issues between financial

platforms. These challenges are consistent with previous studies highlighting infrastructure limitations and security concerns as barriers to digital finance expansion in developing economies (GSMA, 2022; Kshetri, 2016). The findings suggest that digital financial services play a critical role in strengthening financial sector growth and inclusion in Lusaka District, although improvements in digital infrastructure, regulatory frameworks, and financial literacy are necessary to maximize their long-term impact.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study examined the relationship between digital finance and financial sector growth in Lusaka District, Zambia, focusing on mobile money services, digital payment systems, and fintech innovations. Using a mixed-methods cross-sectional design, primary data were collected from 150 respondents and analyzed using Spearman rank correlation analysis, descriptive statistics, and thematic analysis. The findings confirm statistically significant positive associations between all three digital finance variables and financial sector growth. Digital payment systems demonstrated the strongest association ($\rho = 0.71$, $p = 0.000$), followed by mobile money services ($\rho = 0.62$, $p = 0.003$), and fintech innovations ($\rho = 0.48$, $p = 0.045$). These results suggest that digital finance is contributing meaningfully to Lusaka's financial sector development by improving financial access, increasing transaction volumes, and expanding participation among previously excluded populations. Descriptive findings further revealed that the majority of respondents used digital financial services daily, perceived digital finance as making a high or very high contribution to financial sector development and reported improvements in access to financial services and personal financial growth.

However, the study also identified significant barriers that constrain the full realization of digital finance's potential, including poor internet connectivity, cybersecurity threats, high transaction fees, limited financial and digital literacy, and inadequate interoperability between financial platforms. These challenges are structural and user-related, and their resolution requires coordinated action from policymakers, regulators, financial institutions, and fintech firms. The study concludes that digital finance is increasingly shaping Lusaka's financial landscape and is positively associated with enhanced financial participation and sector activity. The sustainability and broader impact of digital finance will depend on addressing infrastructural, regulatory, and knowledge-related challenges to ensure inclusive and sustainable growth in Zambia's financial sector.

5.2 Recommendations

Based on the study findings, several recommendations are directed at policymakers, financial institutions, and fintech firms in Zambia. The government and telecommunications providers should strengthen digital infrastructure, particularly internet connectivity and network coverage. Improved connectivity will enhance access to digital financial platforms and support the growth of digital financial services. Financial institutions, regulators, and fintech companies should enhance cybersecurity systems and consumer protection mechanisms to reduce fraud and digital risks, thereby increasing trust and adoption of digital financial services. Policymakers and financial institutions should implement financial and digital literacy programs to improve users' understanding and effective use of mobile money, digital payments, and other fintech services. Financial service providers should review and reduce transaction fees to make digital financial services more affordable and encourage wider adoption among individuals and small businesses. Regulators and financial institutions should promote greater interoperability between banks, mobile network operators, and fintech platforms to enable seamless and efficient digital financial transactions. The government and regulators should create supportive policies that encourage fintech innovation and partnerships between financial institutions and technology firms to improve financial service delivery and expand access.

REFERENCES

Allen, F., & Gale, D. (2000). *Comparing financial systems*. MIT Press.

Arner, D. W., Barberis, J., & Buckley, R. P. (2016). FinTech: Evolution and regulation. *Journal of Banking Regulation, 17*(4), 221–229. https://doi.org/10.1057/jbr.2016.6

Balyuk, T., & Davydenko, S. (2024). Reintermediation in FinTech: Evidence from online lending. *Journal of Financial and Quantitative Analysis, 59*(5), 19–37.

Bank of Zambia. (2023). *National payment systems in Zambia: Annual report 2023*. Bank of Zambia.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality, and the poor. *Journal of Economic Growth, 12*(1), 27–49.

Carstens, A. (2021, May 11). *Digital finance and the post-COVID-19 recovery* [Speech]. Bank for International Settlements.

Chibesa, K., & Mwange, A. (2025). The role of digital financial literacy in enhancing financial inclusion among informal entrepreneurs in Zambia. *East African Finance Journal, 4*(1), 141–146.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340.

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank.

Donovan, K. P. (2012). Mobile money for financial inclusion. In *Information and communications for development 2012: Maximizing mobile* (pp. 61–73). World Bank.

Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2017). On the fintech revolution. *Journal of Management Information Systems, 35*(1), 220–265.

Goodell, J. W. (2023). AI and finance: Emerging trends in fraud detection. *Finance Research Letters, 40*, Article 102456.

GSMA. (2022). *State of the industry report on mobile money 2022*. GSMA.

Gurley, J. G., & Shaw, E. S. (1960). *Money in a theory of finance*. Brookings Institution.

Haider, H. (2018). *Innovative financial technologies to support livelihoods and economic outcomes* (K4D Helpdesk Report). Institute of Development Studies.

Hasan, I., Jackowicz, K., Kowalewski, O., & Kozlowski, L. (2020). Security risks and digital finance. *Finance Research Letters, 35*, Article 101310.

International Monetary Fund. (2023). *Cyber risk and financial stability: A global perspective*. IMF.

Jack, W., & Suri, T. (2016). The long-run poverty and gender impacts of mobile money. *Science, 354*(6317), 1288–1292.

Kshetri, N. (2016). Cybersecurity and development. *Markets, Globalization & Development Review, 1*(2), Article 3.

Levine, R. (2005). Finance and growth: Theory and evidence. In P. Aghion & S. Durlauf (Eds.), *Handbook of economic growth* (Vol. 1, Part A, pp. 865–934). Elsevier.

Lusardi, A., & Mitchell, O. S. (2023). The importance of financial literacy: Opening a new field. *Journal of Economic Perspectives, 37*(4), 137–154.

Mago, S., & Chitokwindo, S. (2014). The impact of mobile banking on financial inclusion in Zimbabwe: A case for Masvingo Province. *Mediterranean Journal of Social Sciences, 5*(9), 221–230.

Mbiti, I., & Weil, D. N. (2011). *Mobile banking: The impact of M-Pesa in Kenya* (Working Paper No. 17129). National Bureau of Economic Research.

Mishkin, F. S. (2019). *The economics of money, banking, and financial markets* (12th ed.). Pearson Education.

Myovella, G., Karacuka, M., & Haucap, J. (2020). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies. *Telecommunications Policy, 44*(2), Article 101856.

Nyika, A. M. (2024). Challenges in the adoption of mobile money services by mobile phone users in Lusaka, Zambia. *Journal of Business and Strategic Management, 9*(1), 35–72.

OECD. (2020). *Digital disruption in banking and its impact on competition*. OECD Publishing.

Ouma, S. A., Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion. *Review of Development Finance, 7*(1), 29–35.

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review, 18*(4), 329–340.

Park, C.-Y., & Mercado, R. V. (2018). Financial inclusion, poverty, and income inequality. *The Singapore Economic Review, 63*(1), 185–206.

Philippon, T. (2019). *On Fintech and financial inclusion* (Tippie College of Business Working Paper No. 19-01). University of Iowa.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy, 98*(5), S71–S102.

Shen, Y., Han, F., & Li, Y. (2025). *Digital financial inclusion and income inequality in China* (IMF Working Paper No. 2025/071). International Monetary Fund.

United Nations Capital Development Fund. (2020). *State of the digital financial services market in Zambia, 2019: Results from the UNCDF annual provider survey*. UNCDF.

World Bank. (2020). *Digital financial services*. World Bank Group.

Zambia Information and Communications Technology Authority. (2024). *2023 annual ICT market report*. ZICTA.