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Assessing The Role of Emerging Technology Governance Frameworks on Financial Inclusion in Zambia: A Case of Lusaka District

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Abstract

During the previous decade, Zambia experienced a rapid growth in digital financial services, which has been driven mainly by technology advancements in the financial technology (FinTech) arena, such as mobile money services, digital banking, and payment services providers. Mobile money penetration significantly grew from about 14% of the adults using the services in 2015 to more than 58% in 2020, with the amount involved in mobile money transactions significantly escalating to ZMW 452 billion in 2023. Despite these emerging trends, the extent of financial inclusion through the more traditional banking institutions is still modest, with no more than 38% to 39% of adults having formal banking accounts. This is an indication that, despite the rapid growth of digital platforms, their role in ensuring sustainable access to finance is still dependent on the governing structures that oversee their operations. The aim of the study was to assess the impact of emerging technology governance frameworks on financial inclusion in Zambia. The specific objectives of the study were to assess the role of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District, to evaluate the effectiveness of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District, and to identify the channels of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District. The researcher adopted a mixed approach and employed qualitative and quantitative research designs. Stratified simple random sampling is suitable for the quantitative phase because the study sample in Lusaka District is heterogeneous, consisting of multiple ranks, financial providers, private and public sectors, and the general public. Stratification ensures that all key subgroups such as bankers, women, SMEs, lending institutions, and the general population are adequately represented in the sample. This enhances the accuracy of estimates and ensures that findings reflect the wider population structure. The research comprised questionnaires and interview schedules. The questionnaires were used because they are the main means of collecting quantitative primary data. The questionnaires enabled quantitative data to be collected in a standardized manner to ensure the data is consistent and coherent for the analysis. From the findings, the study concludes that the analysis from the model summary and the ANOVA table predicted that financial inclusion ($F(14,257) = 214.739$, $p < 0.05$) has a significant effect on emerging technology governance in the Lusaka district. The data analysis results showed that the majority of the respondents had a high perception that Lusaka District has regulations governing the use of non-traditional data (telecom usage, utility payments) to assess creditworthiness for underserved customers and that the old generation of customers, including baby boomers and Gen X, are familiar with technology and appreciate the convenience and immediacy of performing banking. However, the majority of the respondents also had low perception that governance is ensuring different mobile money providers promote a shared payment infrastructure within Lusaka District and that the adoption of digital technologies in banking is likely improving accessibility and convenience for customers.

Keywords: Emerging, Technology, Governance, Frameworks, Financial, Inclusion

1. Introduction and Background

Gahler (2019), observes that in the last two decades, new technology has transformed the business world, including the banking sector. The world of physical documents has been replaced by digital technology, hence eliminating delays, errors, high risks, and the cost of banking. This new wave of artificial intelligence (AI) has also increased customer expectations and financial inclusion from banks; hence customers expect an improved experience from the bank's offerings. This is because customers in the banking sector are also becoming more informed and highly educated. The new technology has resulted in the adoption of e-banking and automation in order to expand on financial inclusion, hence creating more competition among banks and mobile providers. In this digital era, one of the greatest significant new perceptions in the world of communication and marketing is the growing awareness of the importance of financial inclusion and customer experience (Gahler, 2019).

Bhatt, (2020) observes that the management of customer experience has taken special attention of service providers, but more precisely those in the banking industry (Bhatt, 2020). Due to the increasing cost of traditional banking, retail banks have shifted to automated and innovative services to minimize cost and time for both customers and banks. In today's era, customer experience is more crucial in banking sector than ever before due to intense competition where banks are now concentrating on providing positive customer experience (Tardo et al., 2022). According to Kumar (2020), banks face substantial competition as a result of a shift in customer expectations, entrance of foreign banks, and relatively low service fees (Kumar, 2020) . Almost every bank is concentrating on improving customer experience. Despite these attempts to advance more perceptions into customers' minds, very little is known about the processes that govern the assessment of experience or even a connection that involves multiple experiences.

Ahmed (2021) found that the banking sector across the globe is being confronted by a lot of problems and has become a stagnating industry with limited growth potential (Ahmed, 2021). The World Retail Banking Report of 2022 articulated that the banking sector is finding it tough to innovate and it is now thwarted by outward pressure from online financial services, big tech, and blockchain, all these are eroding the profits of banks (Capgemini, 2023). So, banks are now venturing into digital platforms in an attempt to win back customers but surprisingly the customer experience is still a challenge in the banking sector in Zambia. Chauhan et al., (2022), banks are trying to reposition themselves by capitalizing on technology in an attempt to improve customer experience (Chauhan, 2022). Banks across the globe have prioritized customer loyalty and have utilized technology to create customer experiences. Customers are experiencing challenges when using digital platforms, and this has slowed the adoption and continued use of digital platforms by some members of the public, (ibid).

To win customers entails banks to understand customer preferences and key drivers of customer loyalty and satisfaction (Hendriyani, 2018). The digital channels are utilized by banks to bring convenience and ubiquity to customers and for business survival. Digital banking enables virtuous customer services, which help to retain customers. Despite the extensive literature on customer experience and satisfaction, there is a notable gap in understanding these constructs within the context of the banking sector in Zambia. Previous studies have primarily focused on developed markets, leaving a void in emerging markets such as Zambia.

According to FinScope (2020) Zambia, there has been an increase in the levels of financial inclusion in the country's population from 2009 to 2020. The comparative figures during this period indicate that in 2009, financial inclusion stood at 37.3 percent while financial exclusion was at 62.7 percent. There was an improvement in financial inclusion from 2009 to 2015 when it increased from 37.3 to 59.3 percent while financial exclusion decreased from 62.7 to 40.7 percent. As of 2020, improvements in financial inclusion rose from 59.3 to 69.4 percent with financial exclusion decreasing from 40.7 to 30.6. Such developments indicate that there have been some successes achieved in financial inclusion except that it is the urban areas which recorded the high improvements at the expense of the rural areas where financial inclusion takes place as low as 35 percent with the majority of the population still being excluded at 65 percent. On one hand, financial inclusion is higher in male adults compared to female adults such that in 2015 and 2016 it stood at 61.3 and 71.2 percent while for female adults it stood at 57.4 in 2015 and 67.9 percent in 2016. However, it is the statistics coming from urban areas which give an improved position about financial inclusion as the rural population have much lower rates for women engaged in financial inclusion with the majority of them being financially excluded.

Financial inclusion as a phenomenon is geographically distributed in Zambia. There are more people who are financially included in urban areas and more people who are financially excluded in rural areas. In addition to that it is women in rural areas who are more excluded than their urban counterparts whose statistics show a high proportion of financial inclusion. The rate of financial exclusion for rural women in Zambia stands at 65 to 75 percent while their rural male counterparts are at about 45 to 60 percent. Beck et al (2014) argued that financial inclusion has continued to grow in prominence in African policy circles mainly because of the recent African renaissance in which several countries are pledging to move the vast majority of their populations out the myriads of abject poverty through sustainable financial empowerment and financial literacy. This would involve taking a pivotal role in cross-border banking in financial deepening and access together with financial innovation of products and services which supports the households in their daily livelihoods.

1.2 Statement of the Problem

Makoni (2023) observes that although there has been significant improvement in financial inclusion levels among the adult population in Zambia by about 10% margin from 59.3% in 2015 to 69.4% in 2020 implying that 31.6% of the population is still being financially excluded. The levels of financial inclusion are segmented between adults who use financial products / services in their financial lives (the financially included adults) and those who do not use financial products / services in their financial livelihoods (financially excluded adults). Weak, fragmented, or misaligned governance stifles innovation, undermines consumer protection, or encourages adoption by the underserved. This presents the policy maker's dilemma in formulating evidence-based interventions to balance innovation, stability, and inclusion. Despite significant developments which Zambia has recorded in financial inclusion from 2009 to 2020, more work remains to be done. The FiniMark Trust developed FinScope Zambia which carried out a Survey Report (2020) in collaboration with the Bank of Zambia in assessing the levels of financial inclusion in Zambia. Such a Survey Report is used by the Bank of Zambia to assess the levels of depth for financial inclusion in Zambia. As in 2009, only 37.3% of the population in Zambia were financially included while 62.7% were financially excluded, in 2015 the statistics rose up to 59.3% for the financially included adult population and financially excluded stood at 40.7% and in 2020 the statistics rose to 69.4% were financially included while 30.6% were financially excluded. Even if the financially included population showed a marked increase in 2020, the vast majority of the

people financially included lived in urban areas standing at 70.3% while at 50.2% in rural areas in 2015 and 84.4% in urban areas while it was at 55.9% in rural areas in 2020. There is still a big gap of about 35% which still has to be filled in order to level the degree of financial inclusion in rural areas to urban areas. In addition to that, financial inclusion by gender or sex among the male population was at 61.3% in 2015 and 71.2% in 2020 but for the female population it was at 57.4% in 2015 and 67.9% in 2020. In spite of the increases in the statistics for financial inclusion in both sexes in Zambia, a gender gap in financial inclusion of 3.3% (71.2% – 67.9%) pitching male population higher than the female population. It is against this background that the study seeks to Assess the Role of Emerging Technology Governance Frameworks on Financial Inclusion in Zambia: A Case of Lusaka District.

2. Literature Review

2.1 Previous Studies

To enable responsible innovation, the Organisation for Economic and Corporation Develepment (OECD) has developed an important set of activities in technology governance. This new Framework for Anticipatory Governance of Emerging Technologies helps synthesise and advance this line of work. It complements the recently inaugurated Global Forum on Technology (GFTech), a venue for regular in-depth dialogue to foresee and get ahead of long-term opportunities and risks presented by particular technologies. The Framework provides a general set of considerations that are intended to be a useful guide in these and related discussions

This new Framework for Anticipatory Governance of Emerging Technologies actively promotes responsible innovation across policy fields, emphasizing shared values, anticipation, societal engagement, agile governance, and international cooperation. Both the GFTech and the Framework are built on the premise that, even as technology seems more and more autonomous, value-driven policy choices can and should shape better outcomes. In what is a central pillar of its argument, the new Framework for Anticipatory Governance of Emerging. Technologies suggests that better technological outcomes can be achieved through forward-looking, “agile”, and participatory strategies. These include developing norms, standards, regulations and early-stage innovation processes like building technology roadmaps. This anticipatory approach encourages broader policymaking communities to collaborate closely to ensure the effectiveness of these governance processes and mechanisms. Finally, the Framework emphasizes that international co-operation centred on shared values, a fundamental tenet of the OECD, has never been more important. Realizing the transformative potential of these technologies amidst shared global challenges calls for enhanced co-operation and a collective understanding of risks and opportunities. This points to an important role for the OECD on technology governance in the years ahead.

Financial inclusion initiatives encompass diverse strategies, policies, Emerging Technology Governance Frameworks and interventions aimed at reducing barriers to formal financial services, especially for marginalized populations. In Zambia, these initiatives have evolved over time to address widespread financial exclusion. Regulatory reforms play a crucial role, fostering a conducive environment for financial service provision, including the establishment of microfinance institutions (MFIs) and community banks (Adams, 2020).

MFIs are instrumental in Zambia's financial inclusion efforts, catering to the needs of micro-entrepreneurs and low-income households through tailored financial products (Mulenga and Bhargava, 2018). Mobile money services have revolutionized financial access, leveraging mobile technology to reach remote and marginalised communities (Munyegera et al., 2019). Financial literacy programs are essential for empowering individuals to make informed financial decisions (Makina and Enock, 2019). Innovative banking models like agent banking overcome physical infrastructure challenges (Chilonda and Tembo, 2020).

The genesis of financial inclusion around the world is said to be the late 1990s and early 2000s when several organisations saw the need for diversification from solely offering microcredit services to offering basic access to financial services such as savings and insurance. Hence many non-governmental organisations extended their services by obtaining further licences from authorities to allow them to accept deposit savings and also provide other added financial services especially to the lower income people in their communities where they operate. World bank (2022) states that financial inclusion is a pathway through which households are able to improve their livelihoods by obtaining the means and tools for saving their finances which they have access to at any other time (Bank, 2022).

World Bank (2022) further observes that there are lower levels of financial inclusion in Africa due to the following reasons: Long distances to be covered by would be depositors or clients and lower population densities in some locations especially the rural areas of villages or smaller towns, there have been historically high bank costs relative to incomes which populations in the disadvantaged groups needed to use or save in such institutions, also, there are low education levels and illiteracy such that the population would not comprehend the benefits of engaging in financial services transactions, at times the financial products and services are poorly designed or are not well aligned to the needs of the low-income groups instead would be suited to middle- and high-income groups.

On one hand, there are factors bordering on gender and access to financial inclusion, there are major challenges facing women are: Women have competing demands on their time and they tend to focus on unpaid domestic work as their priority, they are the major culprits lacking assets for collateral to access finances for investments in financial services activities, they have reduced mobility due to time constraints and social norms limiting them from going for some business ventures, and women often engage in lower paying economic activities such as domestic work, farming in non-cash crops or focusing on nurturing their families.

2.2 The role of Emerging Technology Governance Frameworks on Financial Inclusion

Studies have shown that lack of trust and confidence impact uptake and utilisation of digital financial products and services. Financial self-efficacy has been considered a pathway towards increased emerging technology financial inclusion. According to Shiau et al. (2020), when individuals have trust in emerging technology financial institutions and services, they are more likely to gain confidence in using digital financial products and services leading to increased digital financial inclusion. Jose and Ghosh (2024) also support that increased trust in digital finance can increase individuals' financial self-efficacy (confidence) ultimately motivating them to adopt and utilise emerging technology financial products and services.

Sumartini et al. (2024) found that self-efficacy coupled with trust increases the intentions to use emerging technology banking services and products. Scholars such as Mindra and Moya (2017) have considered financial self-efficacy as the psychological bridge for increased adoption and usage of emerging technology financial products and services. From this, financial self-efficacy can have an intermediary role in the relationship between perceived trust and digital financial inclusion.

Digital transformation has significantly reshaped the banking sector globally, and Zambia is no exception. The swift pace of digital advancements in India has fueled a growing demand for digital banking services, allowing customers to access a wide array of banking functionalities from the comfort of their homes. Today, most traditional banks offer digital services, bolstered by government initiatives that promote cashless payments, especially crucial during the pandemic to minimize physical interactions. Additionally, the rise of digital-only banks—fully virtual institutions operating exclusively through mobile applications—has transformed customer service experiences and influenced financial habits.

A study done by Reinart et.al (2019) presents an analysis of the significant changes in the retail sector due to digital transformation, introducing a framework that identifies new sources of value creation resulting from this digital shift. The framework identifies five new sources of value creation resulting from this digital shift such as automation, individualization, ambient embeddedness, interaction, and transparency and control. The basic premise of this framework is that customers prefer to associate with firms that best accomplish value creation on these dimensions. The study by Abdurrahman et.al. (2024) focuses on applying dynamic capabilities within the Technological, Organizational, and Environmental (TOE) and emerging technology financial inclusion frameworks to investigate digital transformation and innovation in the financial sector, offering valuable insights for managing capabilities for successful digital financial inclusion.

2.3 The effectiveness of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District

The overall effect of financial inclusion on economic growth in Zambia has been notably positive, primarily driven by increased access to financial services and the proliferation of digital platforms. This trend aligns with broader findings across Africa, indicating that financial inclusion significantly contributes to economic development (Mwakalila, 2024) . According to the Zambia National Financial Inclusion Strategy (NFIS) 2024-2028, financial inclusion in Zambia increased from 59.3% in 2015 to 69.4% in 2020, highlighting the progress made during the previous strategy period (Zambia NFIS, 2024-2028). This expansion has enabled marginalized groups to participate more fully in the economy, fostering a more inclusive growth model under Emerging Technology Governance Frameworks on Financial Inclusion.

The rise in mobile money accounts has been particularly impactful, facilitating financial transactions for previously unbanked and underserved populations through Emerging Technology Governance Frameworks on Financial Inclusion which connects informal banking to formal financial sector (ibid). As noted in the NFIS (2024-2028), a key achievement of the previous strategy was the launch of the National Financial Switch, which has strengthened interoperability between financial service providers, thereby enhancing access and usage of formal financial services (Zambia NFIS, 2024-2028). Simultaneously, the increased access to credit for small and medium enterprises (SMEs) has been linked to improved business performance, which is crucial for economic growth in Zambia. Studies have shown that SMEs with access to financial services are better positioned to invest in their businesses, create jobs, and contribute to overall economic diversification (Paliwal, 2024). Furthermore, the broader adoption of Emerging Technology Governance Frameworks and digital financial services has been shown to stimulate economic activity, particularly among low-income populations, by reducing transaction costs and increasing efficiency (Fundji, 2024).

To further enhance the positive impact of financial inclusion, policymakers are encouraged to implement strategies such as Emerging Technology Governance Frameworks that promote financial literacy and expand access to digital financial services, particularly in rural areas, (ibid). The NFIS (2024-2028) emphasizes the importance of tailoring financial products and services to meet the specific needs of key sectors, including agriculture and MSMEs, and addressing barriers to access such as geographical constraints and lack of financial literacy. Continued support for SMEs through targeted financial inclusion initiatives can lead to job creation and economic diversification, further driving sustainable growth (Paliwal, 2024). While the evidence strongly supports the positive impact of financial inclusion on economic growth, challenges such as digital literacy and infrastructure limitations remain significant barriers that need to be addressed to maximize these benefits and ensure equitable access to financial services across all segments of Zambian society.

Financial inclusion, particularly through enhanced access to credit and digital financial services, has significantly impacted

the investment levels of Micro, Small, and Medium Enterprises (MSMEs) in Zambia. The National Financial Inclusion Strategy emphasizes the importance of these services in fostering economic growth and empowering MSMEs, which are crucial for job creation and innovation. By reducing barriers to financial access, financial inclusion initiatives have allowed MSMEs to leverage formal financial services to expand their businesses, innovate, and contribute to broader economic growth.

Sichuundu, (2023), observes that increased access to credit has been a key driver of this positive impact. Financial inclusion initiatives have enabled the previously financially excluded to access formal credit, reducing reliance on informal lending systems that often charge exorbitant interest rates. The establishment of microfinance institutions (MFIs) has been instrumental in providing tailored financial products, allowing MSMEs and the previously excluded to invest in their operations and expand. Furthermore, the NFIS (2024-2028) specifically highlights the importance of developing financial products and services that meet the unique needs of MSMEs, recognizing the crucial role they play in the Zambian economy.

The rise of Emerging Technology Governance Frameworks' platforms and other digital financial services has also played a significant role. Digital financial services have facilitated easier transactions, confidence and savings, integrating previously excluded individuals into the formal financial system (Sichuundu, 2023). Additionally, these services have improved financial literacy, enabling the previously excluded to manage and access finances more effectively and make informed investment decisions (Paliwal, 2024). This aligns with the NFIS, which prioritizes the promotion of digital financial services to enhance financial inclusion and drive economic growth.

Mahmood et al., (2024) found that enhanced financial inclusion has led to increased investment levels among MSMEs, contributing to overall economic resilience and growth in Zambia. Studies indicate that MSMEs engaging with MFIs experience improved livelihoods, which correlates with higher investment levels in their businesses, (ibid). However, while financial inclusion has shown positive impacts, challenges remain, such as structural barriers and varying levels of access across different demographics, particularly the youths and the less educated. This highlights the need for continued efforts to ensure equitable access to financial services for all MSMEs and the marginalised, addressing issues such as digital literacy and infrastructure limitations, as emphasized in the NFIS.

2.4 The channels of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District

International Banker (2021) postulates that technology is an enabler and accelerator to financial inclusion in that it helps firms to reach out to both unbanked and underbanked who are predominantly found in remote locations of nations. It should be the goal of financial institutions to ensure that they reach out to the hugely unbanked and under banked populations of the rural areas as ways of enhancing their activities of financial services so that they would be accessible, available and deep in permeating both urban and rural areas (Banker, 2021). Asian Development Bank (2017) agrees that digital technology occurs to be a most significant driver of innovation, competition and economic growth in the world. It further observes that there are many people who are still financially excluded from the digital economy and would need to be brought into the fold in order to broaden the financial inclusion phenomenon to the vast majority of the population, especially in developing countries. Digital technology happens to be a tool which would clearly revolutionise the financial services platform by spreading to many places at a high speed. For the developing countries in the Asia and the Pacific Rim nations, they keep seeking for better modalities of encouraging all of their populations to actively use the four key instruments of financial inclusion of the availability of payment systems, credit, insurance and investment (Bank, 2017).

Cull et al (2017) observed that it is access to financial services in a country which are highly regarded as essential economic programmes which uplift the livelihoods of households of the low-income countries. This is done through access to credit, savings and payments which are made available at any time to facilitate household consumptions. In addition to that, the Asian Development Bank (2017) observed that digital technology has become a special purpose vehicle in the world to spur economic innovation, competition and economic growth. It is cognisant of the fact that many people globally still remain excluded from the digital economy which needs to be used as a tool for broadening the financial inclusion drive of the vast majority of their populations. Hence digital technology remains a key driver for transforming the financial services sector of the country when it comes to empowering people with the levers for jump-starting their livelihoods. It is for this reason that some developing countries in Asia and in the pacific rim decided to explore modalities of encouraging their populations to regularly use the four key instruments of financial inclusion viz a viz access to payment systems, credit, insurance services and investments.

Yunnus (2003) and his Bangladeshi Grameen Bank contributed to the microfinance revolution which has pushed to greater extent the financial markets and introduced new products, new providers of credit or finance and introduced new markets for the credit providers. This revolution has been a global one whose drive in the field microfinance spread globally and has now been supported by other initiatives such as the worldwide spreading of mobile banking which has brought about an increase in the activities of financial inclusion with great penetration in developing countries too after its high success in the developed countries (Yunus, 2003).

2.5 Gaps in the Literature

While the existing literature highlights the positive impact of financial inclusion on economic growth and MSME development in Zambia, several gaps remain that warrant further investigation. A primary gap concerns the limited

exploration of the heterogeneous effects of financial inclusion across different types of MSMEs.

2.6 Theoretical Framework

This study is grounded in two theories that align closely with the nature of Emerging Technology Governance Frameworks and its influence on Financial Inclusion in Lusaka District.

Institutional Theory

These institutional theories explain how organizational or social structures and processes acquire meaning and continuity beyond their technical goals. (Suddaby, 2010). Institutional theory itself is concerned about the processes by which formal and informal structures, including schemes, rules, norms and routines, become established as authoritative guidelines for social behavior (Suddaby, 2010; Munir, 2015; Willmott, 2015; Peters, 2022). Institutional theory explains how structures are created, diffused, adopted, adapted, and how they fall into decline and disuse over time (Scott, 2005). Understanding financial inclusion in the context of formal and informal institutions is important because institutional factors such as enduring rules, practices, law and structures can influence people's decision making and also influence how they engage with formal financial services. It can influence people's decision on how to access formal financial services, and it can have positive or negative implications for the level of financial inclusion in society.

Institutional Theory explains how formal and informal institutions shape financial inclusion by influencing access to and use of financial services. Strong institutions such as transparent regulations, effective governance, and legal frameworks enhance trust, reduce risks, and promote broader financial participation. Empirical evidence shows that higher institutional quality correlates with increased financial penetration, accessibility, and usage. This theory underscores the need for policy reforms and institutional strengthening to foster inclusive financial systems and improve banking sector stability, Ali et al, (2021). These studies control for the effect of institutional quality on the level of financial inclusion. The emphasis on institutional quality as a control variable in financial inclusion empirical research reflects the need for independent formal institutions that can enforce rules without fear, and carry out their duties fairly and with appropriate legal powers to sanction rule-breakers, in promoting financial inclusion. This theory will especially address research objective one and two in trying to understand the role and the effectiveness of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District.

The institutional theory of financial inclusion states that people constantly interact with formal institutions and informal institutions in society, and their constant interaction with these institutions shape their views on whether they need to join the formal financial sector, remain in the formal financial sector, exit the formal financial sector after joining, or never join the formal financial sector.

The institutional theory of financial inclusion assumes that:

- Some individuals and firms have incomplete information about how to access formal financial services (Ozili, 2020);
- Some individuals and firms have incomplete information about the conditions they must meet in order to access formal financial services (Claessens and Tzioumis, 2006);
- Some individuals and firms have incomplete information about the constraints and risks they might face when they join the formal financial sector. These constraints or risks include income and ethnic discrimination, the possible loss of one's deposit when a bank fails, high or multiple transaction costs, etc.

Knowing that they have incomplete information about how to access formal finance, this will motivate them to interact with the informal or formal institutions they have trust in, in order to obtain complete information which will form the basis of their decision making to be financially included. Their frequent interaction with these institutions will shape their views on whether they need access to formal financial services and how to access formal financial services. It will shape their views on the benefits and disadvantages of formal financial services, and shape their views on how to overcome the obstacles to accessing formal financial services. Such views will influence their decision on whether to join the formal financial sector or to remain outside the formal financial sector, and this will affect the level of financial inclusion. These institutions may be formal institutions such as constitutions, local laws, community rules, regulations, contracts, etc. The institutions may also be informal institutions such as unwritten rules, ethical codes, local culture, attitudes, values, tradition, norms of behavior, etc.

Informal institutions are enduring and unwritten rules, norms or codes of behavior that are created, communicated, shared and enforced by members of society. Often, informal institutions are widely known, they become tradition and tend to be more persistent than formal rules (North, 2005).

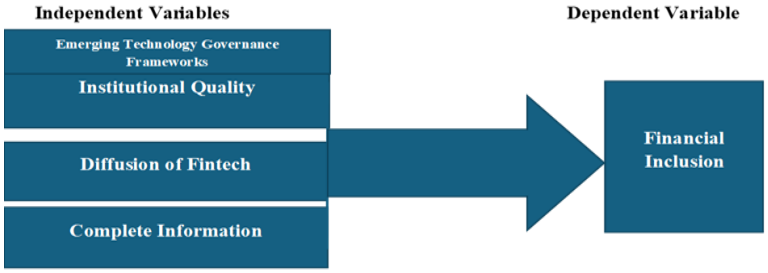
Enduring informal institutions are multiple shared standards of acceptable behavior or informal understanding among members of society and which have lasted over many years. Enduring informal institutions are powerful drivers of people's attitude towards formal financial institutions. Informal institutions can reinforce distrust in formal financial institutions, and discourage members from trusting formal financial institutions with their money or savings. Another factor that contributes to this is when there is a strong belief in society that formal financial institutions are self-serving and do not pursue the interest of customers based on past experiences. This can make some societal members feel their money is never safe in banks. It can also make them to avoid formal financial institutions, or make them believe that it will be difficult to obtain basic financial services from formal financial institutions to meet their emergency needs. They will communicate such belief to other members of society, and also pass the information to the future generation. This will lead to mistrust in formal financial institutions, and decrease trust in the formal financial system, thereby making members

of society unwilling to join the formal financial sector. This will decrease the level of financial inclusion.
Informal institutions can also reinforce trust in formal financial institutions, and encourage members to trust formal financial institutions with their money or savings. A factor that contributes to this is when there is a strong belief in society that formal financial institutions bring great benefit to members of society based on past experiences. This can make some societal members feel their money is safe in banks. It can make them patronize formal financial institutions, or make them believe that they can obtain basic financial services from formal financial institutions to meet their emergency needs. They will communicate such belief to other members of society, and also pass the information to the future generation. This will lead to trust in formal financial institutions, and increase trust in the formal financial system, thereby making members of society willing to join the formal financial sector. This will lead to greater financial inclusion.

Diffusion of Innovation Theory

Innovation diffusion theory explains that the characteristics of innovation are the nature of the diffusion of innovation, where the characteristics of innovation are one that determines the successful use of technology. All products do not have the same possibilities for consumer acceptance; some products can become popular in just one night while others require a very long time to receive or even never be widely accepted by consumers. Innovation Characteristics determine the speed of innovation adoption process at farmers level as technology users. In the speed of the process of adoption of innovation is determined by several factors such as communication channels, characteristic features of social systems, promotional activities and the role of communicators (Rogers, 1962) and (Schiffman and Kanuk, 2010).
Because financial technologies that facilitate access to financial services within Lusaka District, such as ATMs and mobile phone and payments systems are subject to positive network externalities, the diffusion of fintech will be both a determinant of, and determined by, the extent of financial inclusion. Moreover, the demand for financial service-enabling technologies, such as mobile phones and ATMs, is expected to be positively determined by income per capita. Thus, a three equation system where income per capita is determined by capital accumulation, human capital, employment and the diffusion of financial technology and financial inclusion; fintech is shaped by financial inclusion and GDP per capita and a number of economic and social-economic variables (Graff 2005), and financial inclusion is determined by GDP per capita, fintech, financial infrastructure, economic structure and socio- economic variables, including political and economic stability and freedom from corruption.

2.7 Conceptual Frameworks



Source: *Author's Design (2026)*

Figure 1: Conceptual Framework

Operationalization of Variables (Conceptual Framework)
This study is anchored on the relationship between Emerging Technology Governance Frameworks (Independent Variable) and Financial Inclusion (Dependent Variable) within Luska District.
Independent Variable (IV): Emerging Technology Governance Frameworks

- Institutional Quality: As a control variable in financial inclusion empirical research reflects the need for independent formal institutions that can enforce rules without fear, and carry out their duties fairly and with appropriate legal powers to sanction rule-breakers, in promoting financial inclusion, Ali et al, (2021).
- Diffusion of Fintech: Because financial technologies that facilitate access to financial services within Lusaka District, such as ATMs and mobile phone and payments systems are subject to positive network externalities, the diffusion of fintech will be both a determinant of, and determined by, the extent of financial inclusion (Schiffman and Kanuk, 2010).
- Complete Information: Knowing that individuals have incomplete information about how to access formal finance, this will motivate them to interact with the informal or formal institutions they have trust in, in order to obtain complete information which will form the basis of their decision making to be financially included Ali et al, (2021).

Dependent Variable (DV): Financial Inclusion

3 Research Methodology and Design

This study employed a convergent parallel mixed-methods design, in which quantitative data was gathered using structured questionnaires and qualitative data through interviews and focus group discussions (FGDs). Both data types will be collected at the same time, analysed separately, and then brought together during interpretation to generate a comprehensive understanding. Within the research onion framework, mixed methods are identified as a key strategy that enables the integration of quantitative accuracy with qualitative richness (Saunders et al., 2019). The convergent parallel design specifically entails the concurrent collection of numerical and narrative data, their independent analysis, and the subsequent merging of findings to reveal areas of alignment, complementarity, or divergence (Creswell & Clark, 2018). This makes the strategy well suited to the study, as understanding the influence of Emerging Technology on financial governance requires combining measurable trends with customers' lived experiences. Lusaka District, the focus of this study, is the administrative and commercial centre of Zambia and hosts the one of the busiest financial centres. As the most urbanised and densely populated district in the country, Lusaka experiences high levels of socio-economic activity, which in turn places significant pressure on financial sectors, such as banks, Micro-finance lending institutions, and mobile money (Central Statistical Office [CSO], 2022). The study population includes members of the general public in Lusaka District, which stands at 2,212,301 according to the 2022 Census, as they are recipients of financial services and therefore able to provide crucial insights into how Emerging Technology Governance Frameworks practices affect their experiences with financial including. This population includes various ranks and formal sector employees, informal sector, graduates, school leavers, and every person expose to different dimensions of financial inclusion. To calculate the sample size based upon confidence levels, the researcher adopted Yamane formula. It helps determine the appropriate sample size needed for a study based on the total defined population size and a desired margin of error.

Formula:

The formula is: $n = N / (1 + N * e^2)$.

Where:

n: represents the required sample size according to some researchers.

N: represents the total population size says a statistics website.

e: represents the desired margin of error of 0.05 for 5%.

Therefore, n= 2,212,301 / (1+2,212,301 (0.05)2

n=400 heterogeneous samples.

Stratified simple random sampling is suitable for the quantitative phase because the study sample in Lusaka District is heterogeneous, consisting of multiple ranks, financial providers, private and public sectors and general public. Stratification ensures that all key subgroups such as bankers, women, SMEs, lending institutions, and general population are adequately represented in the sample (Saunders et al., 2019). This enhances the accuracy of estimates and ensures that findings reflect the wider population structure. For the qualitative phase, purposive sampling is most appropriate because the aim is to obtain deep, context-rich insights from individuals with specialised knowledge or meaningful experiences in Emerging Technology Governance Frameworks. Purposive sampling allows the researcher to deliberately select financial leaders, technological experts directly involved in implementing or overseeing financial inclusion initiatives (Creswell & Poth, 2018). This ensures the collection of high-value information required to explain the nuances, challenges, and practical realities underlying fintech practices.

A structured questionnaire was used as the primary quantitative instrument because they enable efficient collection of standardized data from a large sample, enhancing reliability and comparability across respondents (Bryman, 2016). In this study, the questionnaire focused on measurable aspects of Emerging Technology Governance Frameworks, perceived financial inclusion outcomes, and the frequency or effectiveness of specific financial sector change actions within the Lusaka District. Key themes will include: types of Emerging Technology Governance Frameworks adopted, perceived improvements in financial inclusion delivery, and challenges encountered in implementing Emerging Technology Governance Frameworks.

In-depth key informant interviews (KIIs) will complement the quantitative data by eliciting detailed insights the community. Each KII explored themes such as: practical experiences with Emerging Technology Governance Frameworks, effects of fintech on financial inclusion, and group-level perceptions of challenges and opportunities within the Lusaka financial sector environment from the perspective general public. KIIs are useful for exploring complex institutional processes and generating nuanced explanations that cannot be captured through structured instruments (Creswell & Poth, 2018). All data collection tools were administered in a safe and protective environment and not last longer than 45 minutes.

4 Findings

4.1 Research Q 1: The Effectiveness of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District

To assess the effectiveness of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District. The variables which relate to the effectiveness of emerging technology governance frameworks on financial inclusion in

Lusaka were analyzed using the weighted average to determine the variables with the highest and lowest perception among the respondents. The data analysis results show that majority of the respondents (more than 69%) had a high perception that, the overall effect of financial inclusion on economic growth in Zambia had been notably positive.

The respondents equally had a high perception (more than 89%) that ETGF and digital financial services had been shown to stimulate economic activity, particularly among low-income populations, and that financial inclusion initiatives had enabled the previously financially excluded to access formal credit, also that the establishment of microfinance institutions (MFIs) had been instrumental in providing tailored financial products. These initiatives enable marginalized populations to access, save, and borrow, aiding in poverty reduction and tailored financial product delivery. The high perception (89%) among respondents underscores the transformative role of digital financial services and ETGF in boosting economic activity, especially for low-income groups. Financial inclusion initiatives, bolstered by microfinance institutions (MFIs), have successfully expanded access to formal credit, reducing exclusion and fostering entrepreneurial opportunities within Lusaka district. These findings align with broader evidence that digital financial inclusion in emerging economies drives inclusive growth and poverty reduction, particularly in Zambia. MFIs' tailored products enhance financial resilience, enabling marginalized populations to participate in the formal economy.

The study agrees with Innovation diffusion theory which explains that because financial technologies that facilitate access to financial services within Lusaka District, such as ATMs and mobile phone and payments systems are subject to positive network externalities, the diffusion of fintech will be both a determinant of, and determined by, the extent of financial inclusion. Moreover, the demand for financial service-enabling technologies, such as mobile phones and ATMs, is expected to be positively determined by income per capita. Thus, a three equation system where income per capita is determined by capital accumulation, human capital, employment and the diffusion of financial technology and financial inclusion; fintech is shaped by financial inclusion and GDP per capita and a number of economic and social-economic variables (Graff 2005), and financial inclusion is determined by GDP per capita, fintech, financial infrastructure, economic structure and socio- economic variables, including political and economic stability and freedom from corruption. Furthermore, the study through regression analysis tested the dependent variable financial inclusion and was regressed on predicting variables of effects of emerging technology on governance framework in Lusaka to test the hypothesis H1. The analysis from the model summary and the ANOVA test predicted that financial inclusion, $F(14,257) = 214.739$, $p<0.05$) has a significant effect on emerging technology governance in Lusaka district. The results are shown in Table 1.

Table 1: Effectiveness of emerging tech governance framework; Source: Field data, (2026)

Statement	5 (sa)	a(4)	3(n)	2(d)	1(sd)	Mean	Std. Deviation	Decision
The overall effect of financial inclusion on economic growth in Zambia has been notably positive.	89 (34.6%)	90 (35%)	32 (12.5%)	46 (17.9%)		**3.86**	1.083	High perception
ETGF and digital financial services have been shown to stimulate economic activity, particularly among low-income populations.	104 I(40.5%)	125 (48.6%)	8 (3.1%)	20 (7.8%)		**4.22**	0.838	High perception
Continued support for SMEs through targeted financial inclusion initiatives can lead to job creation.	70 (27.2%)	81 (31.5%)	23 (8.9%)	23 (8.9%)	60 (23.3%)	3.3	1.531	Low perception
Financial inclusion initiatives have enabled the previously financially excluded to access formal credit.	82 (31.9%)	134 (52.1%)	20 (7.9%)	21 (8.2%)		**4.08**	0.848	High perception
Financial inclusion initiatives have allowed MSMEs and individuals to leverage formal financial services to expand their businesses.	74 (28.8%)	59 (23.0%)	33 (12.8%)	91 (35.4%)		3.45	1.24	Low perception
The establishment of microfinance institutions (MFIs) has been instrumental in providing tailored	92 (35.8%)	139 (54.1%)	1 (0.4%)	25 (9.7%)		**4.16**	0.853	High perception
The rise of Emerging Technology Governance Frameworks' platforms has also played a	65 (25.3%)	90 (35.0%)	16 (6.2%)	43 (16.7%)	43 (16.7%)	3.35	1.443	Low perception
Digital financial services have facilitated easier transactions, integrating previously excluded individuals into the formal financial	134 (52.1%)	58 (22.6%)	42 (16.3%)	23 (8.9%)		**4.18**	1.007	High perception
Digital financial services have facilitated confidence and savings among previously excluded	45 (17.5%)	83 (32.3%)	71 (27.6%)	58 (22.6%)		3.45	1.026	Low perception
Mobile money services have revolutionized financial access, leveraging mobile technology to reach remote and marginalised	148 (57.6%)	44 (17.1%)	42 (16.3%)	23 (8.9%)		**4.23**	1.023	High perception
Financial inclusion can help reduce poverty and inequality	25 (9.7%)	171 (66.5%)	44 (17.1%)	17 (6.6%)		3.79	0.702	Low perception
Regulatory reforms play a crucial role, fostering a conducive environment for financial service	157 (61.1%)	57 (22.2%)	23 (8.9%)	20 (7.8%)		**4.37**	0.939	High perception
Digital banking handles customer complaints directly and		85 (33.1%)	91 (35.4%)	81 (31.5%)		3.02	0.805	Low perception
financial inclusion is a pathway through which households are able to improve their livelihoods.	25 (9.7%)	172 (66.9%)	23 (8.9%)	37 (14.4%)		3.72	0.829	Low perception

4.2 Research Q 2: The role of emerging technology governance frameworks on financial inclusion in Lusaka District

To evaluate the role of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District. The variables which relate to the role of emerging technology governance frameworks on financial inclusion in Lusaka were analyzed using the weighted average to determine the variables with the highest and lowest perception among the respondents. The data analysis results show that majority of the respondents (more than 69%) had a high perception that, the overall effect of financial inclusion on economic growth in Zambia had been notably positive.

The respondents equally had a high perception (more than 89%) that ETGF and digital financial services had been shown to stimulate economic activity, particularly among low-income populations, and that financial inclusion initiatives had enabled the previously financially excluded to access formal credit, also that the establishment of microfinance institutions (MFIs) had been instrumental in providing tailored financial products. These initiatives enable marginalized populations to access, save, and borrow, aiding in poverty reduction and tailored financial product delivery. The high perception (89%) among respondents underscores the transformative role of digital financial services and ETGF in boosting economic activity, especially for low-income groups. Financial inclusion initiatives, bolstered by microfinance institutions (MFIs), have successfully expanded access to formal credit, reducing exclusion and fostering entrepreneurial opportunities within Lusaka district. These findings align with broader evidence that digital financial inclusion in emerging economies drives inclusive growth and poverty reduction, particularly in Zambia. MFIs' tailored products enhance financial resilience, enabling marginalized populations to participate in the formal economy.

The study agrees with Innovation diffusion theory which explains that because financial technologies that facilitate access to financial services within Lusaka District, such as ATMs and mobile phone and payments systems are subject to positive network externalities, the diffusion of fintech will be both a determinant of, and determined by, the extent of financial inclusion. Moreover, the demand for financial service-enabling technologies, such as mobile phones and ATMs, is expected to be positively determined by income per capita. Thus, a three equation system where income per capita is determined by capital accumulation, human capital, employment and the diffusion of financial technology and financial inclusion; fintech is shaped by financial inclusion and GDP per capita and a number of economic and social-economic variables (Graff 2005), and financial inclusion is determined by GDP per capita, fintech, financial infrastructure, economic structure and socio- economic variables, including political and economic stability and freedom from corruption. The results are shown in Table 2.

Table 2: Role of emerging tech governance framework; Source: Field data, (2026)

Statement	5 (sa)	a(4)	3(n)	2(d)	1(sd)	Mean	Std. Deviation	Decision
Emerging technology governance frameworks play a critical role in ensuring that innovations like blockchain.	114 (44.4%)	84 (32.7%)	51 (19.9%)	8 (3.1%)		**4.18**	0.858	High Perception
Governance frameworks mitigate risks such as data privacy breaches and algorithmic bias?	31 (12.1%)	121 (47.1%)	97 (37.7%)	8 (3.1%)		3.68	0.723	Lowperception
By standardizing compliance, they lower barriers for fintech start-ups to serve marginalized populations.	79 (30.7%)	117 (45.5%)	61 (23.7%)			**4.07**	0.736	High Perception
Emerging technology governance frameworks facilitate inclusive access to credit, savings, and insurance through responsible innovation.	77 (30.0%)	74 (28.8%)	66 (25.7%)	40 (15.6%)		3.73	1.054	Lowperception
Strong governance also ensures that digital identity systems and open banking practices are accessible and equitable.	84 (32.7%)	111 (43.2%)	62 (24.1%)			**4.09**	0.75	High Perception
Innovative banking models like agent banking overcome physical infrastructure challenges	72 (28.0%)	143 (55.6%)	120 (7.8%)	22 (8.6%)		**4.03**	0.838	High Perception
Ultimately, well-designed frameworks balance innovation with consumer protection, driving sustainable financial inclusion.	46 (17.9%)	106 (41.2%)	63 (24.5%)	42 (16.3%)		3.61	0.963	Lowperception
If a debit/credit card becomes defective, a replacement is issued within an acceptable time frame.	9 (3.5%)	89 (34.6%)		159 (61.9%)		2.8	1.034	Lowperception
Emerging technology governance frameworks in financial inclusion aim to balance innovation with consumer protection and systemic stability within Lusaka District	45 (17.5%)	134 (52.1%)	39 (15.2%)	39 (15.2%)		3.72	0.927	Lowperception

4.3 Research Q 3: The channels of emerging technology governance frameworks on financial inclusion in Lusaka District

To identify the channels of Emerging Technology Governance Frameworks on Financial Inclusion in Lusaka District. The variables which relate to channel of emerging technology governance frameworks on financial inclusion in Lusaka were analyzed using the weighted average to determine the variables with the highest and lowest perception among the respondents. The results showed that majority of the respondents had a high perception (more than 54%) that Lusaka District has regulations governing the use of non-traditional data (telecom usage, utility payments) to assess creditworthiness for underserved customers and that the old generation of customers, including baby boomers and Gen X, are familiar with technology and appreciate the convenience and immediacy of performing banking. Furthermore, the majority of the respondents also had high perception (79%) that Governance is ensuring different mobile money providers

promote a shared payment infrastructure within Lusaka District and that the adoption of digital technologies in banking is likely improving accessibility and convenience for customers. This is significant for underserved populations lacking formal credit histories. The familiarity of baby boomers and Gen X with digital banking highlights a generational shift toward tech adoption, challenging stereotypes about older demographics. Combined with Zambia's increasing mobile money usage, this indicates strong potential for inclusive fintech growth, especially when supported by clear regulatory frameworks and accessible digital infrastructure. This alignment likely enhances interoperability, reduces transaction friction, and improves financial inclusion. The perceived rise in accessibility and convenience from digital banking reflects broader trends in fintech adoption, were user trust and regulatory support drive uptake. Such infrastructure is vital for economic resilience and equitable access to financial services in urban centers like Lusaka. These findings agree with Sichuundu (2023), who found that the rise of Emerging Technology Governance Frameworks' platforms and other digital financial services has also played a significant role. Digital financial services have facilitated easier transactions, confidence and savings, integrating previously excluded individuals into the formal financial system. Additionally, these services have improved financial literacy, enabling the previously excluded to manage and access finances more effectively and make informed investment decisions (Paliwal, 2024). The results are shown in Table 3.

Table 3: The channel of emerging technology framework; Source: Field data, (2026)

Statement	TRUE	FALSE	Mean	Std. Deviation	Decision
Governance is ensuring different mobile money providers promote a shared payment infrastructure within Lusaka District.	182 (70.8%)	75 (29.2%)	1.29	0.455	Low perception
Lusaka District has regulations governing the use of non-traditional data (telecom usage, utility payments) to assess creditworthiness for underserved customers.	139 (54.1%)	118 (45.9%)	**1.46**	0.499	High perception
The adoption of digital technologies in banking is likely improving accessibility and convenience for customers.	203 (79.0%)	54 (21.0%)	1.21	0.408	Low perception
The old generation of customers, including babyboomers and Gen X, are familiar with technology and appreciate the convenience and immediacy of performing banking transactions on their smartphones, anytime and anywhere.	165 (64.2%)	92 (35.8%)	**1.36**	0.48	High perception
Service quality significantly affects the sustainability and profitability of digital banking enterprises by bridging the gap between technological innovation and customer expectations	183 (71.2%)	74 (28.8%)	1.29	0.454	Low perception

4.4 Regression analysis

The regression analysis was used to test the Hypotheses H1, H2 and H3 to determine if Financial Inclusion had an effect on financial institution quality, Diffusion of financial technology and technology framework. The results are as shown below.

H1: Financial inclusion has a positive effect of emerging technology governance framework in Lusaka district.

The hypothesis tests if financial inclusion had a positive effect on emerging technology governance framework in Lusaka district. The dependent variable financial inclusion was regressed on predicting variables of effects of emerging technology on governance framework in Lusaka to test the hypothesis H1. The analysis from the model summary and the ANOVA table predicted that financial inclusion, F (14,257) =214.739, $p<0.05$) has a significant effect on emerging technology governance in Lusaka district. These results clearly direct the positive effect of financial inclusion, R2=0.926 depicts that the model explains 92.6 % of the variance in the effects of emerging technologies governance framework in Lusaka province. The tables 4 and 5 below.

Table 4: Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.962[a]	.926	.921	.300	2.466

Predictors: (Constant), financial inclusion is a pathway through which households are able to improve their livelihoods., Financial inclusion initiatives have enabled the previously financially excluded to access formal credit, Digital financial services have facilitated confidence and savings among previously excluded individuals., The overall effect of financial inclusion on economic growth in Zambia has been notably positive., Regulatory reforms play a crucial role, fostering a conducive environment for financial service provision, ETGF and digital financial services have been shown to stimulate economic activity, particularly among low-income populations., The establishment of microfinance institutions (MFIs) has been instrumental in providing tailored financial products., Financial inclusion initiatives have allowed MSMEs and individuals to leverage formal financial services to expand their businesses., Mobile money services have revolutionized financial access, leveraging mobile technology to reach remote and marginalised communities., Digital banking handles customer complaints directly and immediately., The rise of Emerging Technology Governance Frameworks' platforms has also played a significant role in FI, Continued support for SMEs through targeted financial inclusion initiatives can lead to job creation., Financial inclusion can help reduce poverty and inequality, Digital financial services have facilitated easier transactions, integrating previously excluded individuals into the formal financial system.
b. Dependent Variable: How long have you been banking?

Table 5: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	270.095	14	19.292	214.739	.000[b]
	Residual	21.742	242	.090		
	Total	291.837	256			

Table 5; H_1 ANOVA Table; Source: Field data, (2026)

a. Dependent Variable: How long have you been banking?

b. Predictors: (Constant), financial inclusion is a pathway through which households are able to improve their livelihoods., Financial inclusion initiatives have enabled the previously financially excluded to access formal credit, Digital financial services have facilitated confidence and savings among previously excluded individuals., The overall effect of financial inclusion on economic growth in Zambia has been notably positive., Regulatory reforms play a crucial role, fostering a conducive environment for financial service provision, ETGF and digital financial services have been shown to stimulate economic activity, particularly among low-income populations., The establishment of microfinance institutions (MFIs) has been instrumental in providing tailored financial products., Financial inclusion initiatives have allowed MSMEs and individuals to leverage formal financial services to expand their businesses., Mobile money services have revolutionized financial access, leveraging mobile technology to reach remote and marginalised communities., Digital banking handles customer complaints directly and immediately., The rise of Emerging Technology Governance Frameworks' platforms has also played a significant role in FI, Continued support for SMEs through targeted financial inclusion initiatives can lead to job creation., Financial inclusion can help reduce poverty and inequality, Digital financial services have facilitated easier transactions, integrating previously excluded individuals into the formal financial system.

H2: Financial inclusion has played a significant role in influencing emerging technological framework in Lusaka district.

The hypothesis tests if financial inclusion contributed a significantly in influencing emerging technology governance framework in Lusaka district. The dependent variable financial inclusion was regressed on predicting variables of the role of emerging technology on governance framework in Lusaka to test the hypothesis H2. The results were analysis using the model summary and the ANOVA table and the results predicted that financial inclusion, $F(9,257) = 336.740$, $p<0.05$) plays a significant role on emerging technology governance in Lusaka district. These results clearly direct the positive effect of financial inclusion, $R2=0.925$ depicts that the model explains 92.5 % of the variance in the role of emerging technologies governance framework in Lusaka province. The tables 6 and 7 below show the summary.

Table 6: Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	.962[a]	.925	.922	.298	2.029

a. Predictors: (Constant), Emerging technology governance frameworks in financial inclusion aim to balance innovation with consumer protection and systemic stability within Lusaka District, Emerging technology governance frameworks play a critical role in ensuring that innovations like blockchain., Emerging technology governance frameworks facilitate inclusive access to credit, savings, and insurance through responsible innovation., Innovative banking models like agent banking overcome physical infrastructure challenges, Governance frameworks mitigate risks such as data privacy breaches and algorithmic bias?, By standardizing compliance, they lower barriers for fintech start-ups to serve marginalized populations., If a debit/credit card becomes defective, a replacement is issued within an acceptable time frame., Ultimately, well-designed frameworks balance innovation with consumer protection, driving sustainable financial inclusion., Strong governance also ensures that digital identity systems and open banking practices are accessible and equitable.
b. Dependent Variable: How long have you been banking?

Table 7: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	269.844	9	29.983	336.740	.000[b]
	Residual	21.992	247	.089		
	Total	291.837	256			
a. Dependent Variable: How long have you been banking?						
b. Predictors: (Constant), Emerging technology governance frameworks in financial inclusion aim to balance innovation with consumer protection and systemic stability within Lusaka District, Emerging technology governance frameworks play a critical role in ensuring that innovations like blockchain., Emerging technology governance frameworks facilitate inclusive access to credit, savings, and insurance through responsible innovation., Innovative banking models like agent banking overcome physical infrastructure challenges, Governance frameworks mitigate risks such as data privacy breaches and algorithmic bias?, By standardizing compliance, they lower barriers for fintech start-ups to serve marginalized populations., If a debit/credit card becomes defective, a replacement is issued within an acceptable time frame., Ultimately, well-designed frameworks balance innovation with consumer protection, driving sustainable financial inclusion., Strong governance also ensures that digital identity systems and open banking practices are accessible and equitable.						

H3: Financial inclusion has created channels of technology governance framework in Lusaka province.

The hypothesis tests if financial inclusion had created channels of technology governance framework in Lusaka district. The dependent variable financial inclusion was regressed on predicting variables of the role of emerging technology on governance framework in Lusaka to test the hypothesis H3. The results were analyzed using the model summary and the ANOVA table and they predicted that financial inclusion, $F(5,257) = 62.611$, $p<0.05$) created channels of technology for technology governance in Lusaka district. These results clearly direct the positive effect of financial inclusion, $R2=0.555$ depicts that the model explains 55.5 % of the variance in creating channels of technology governance framework in Lusaka province. The tables 8 and 9 below show the summary.

Table 8; H3 Model summary; Source: Field data, (2026)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
3	.745[a]	.555	.546	.719	1.936
Predictors: (Constant), Service quality significantly affects the sustainability and profitability of digital banking enterprises by bridging the gap between technological innovation and customer expectations., Lusaka District has regulations governing the use of non-traditional data (telecom usage, utility payments) to assess creditworthiness for underserved customers., The old generation of customers, including babyboomers and Gen X, are familiar with technology and appreciate the convenience and immediacy of performing banking transactions on their smartphones, anytime and anywhere., Governance is ensuring different mobile money providers promote a shared payment infrastructure within Lusaka District, The adoption of digital technologies in banking is likely improving accessibility and convenience for customers. Dependent Variable: How long have you been banking?					

Table 9; H3 ANOVA Table; Source: Field data, (2026)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	161.971	5	32.394	62.611	.000[b]
	Residual	129.865	251	.517		
	Total	291.837	256			
a. Dependent Variable: How long have you been banking?						
b. Predictors: (Constant), Service quality significantly affects the sustainability and profitability of digital banking enterprises by bridging the gap between technological innovation and customer expectations., Lusaka District has regulations governing the use of non-traditional data (telecom usage, utility payments) to assess creditworthiness for underserved customers., The old generation of customers, including babyboomers and Gen X, are familiar with technology and appreciate the convenience and immediacy of performing banking transactions on their smartphones, anytime and anywhere., Governance is ensuring different mobile money providers promote a shared payment infrastructure within Lusaka District, The adoption of digital technologies in banking is likely improving accessibility and convenience for customers.						

4.5 Thematic analysis

- Using the open-ended questionnaires, the respondents were asked to determine the most effective FI Initiatives that they use. Using the thematic analysis; Mobile money, Agent Banking and Bank to wallet were determined as the most popular FI tools in Zambia. The respondents indicated that these tools have made it easy for both rural and urban communities to transfer money, do business, and pay bills. They also mentioned that these tools are less time-

consuming, with low transaction costs for receiving and sending payments within and outside the country.

- The respondents were asked to determine the effectiveness of FI in fostering economic growth. According to the thematic analysis the following themes were detected;
  - Job creation: Mobile money services have enabled small business owners to expand their operations and, in the process, create employment for the youth.
  - Enhanced financial access for households, MSMES, and informal services.
  - Reduced transaction costs and time lags: Transactions can be conducted in the comfort of homes or by walking/traveling a short distance to the service centres.
  - Laying the infrastructure for digital commerce and credit expansion: Consumers are able to access credit easily and meet their daily needs using tools like mobile money, Siliza and Zamcash.
- The respondents were asked to determine the challenges faced while accessing FI interventions. From the thematic analysis the responses are as below;
  - Network unavailability: Some areas have poor Network coverage, thus making it challenging to access certain transaction services.
  - Increased fraud cases: There is an increase in fraud cases, and several consumers have lost a lot of money. This is eroding the trust in these services as the consumers think the service providers and the government is not doing enough to protect their interests.
  - Increased failed transactions due to system time: There is an increase in failed transactions due to either poor services or network, and the process to resolve these challenges is very long and laborious, hence some consumers have lost a lot of money in the process.
  - Agents have limited liquidation: Due to the risk of theft or the unavailability or resources. It has been observed that service providers mostly don't have enough liquid to meet the demands. Therefore, customers tend to be disappointed when they want to transact using the agents.
- Lastly the respondents were asked to suggest any future improvements in the Emerging Governance Technology Frameworks and FI system and the responses are as below;
  - The government should consider implementing a fee structure to balance revenues, taxes, and levies for business owners in this industry.
  - Address fraud and cybersecurity: Both the government and the service providers should put in measures to protect the consumers. This will build trust and ensure that consumers feel protected.
  - Reduce transaction costs: Consumers feel that the costs of transactions are very high and are a hindrance to growth.
  - Improve telecommunications infrastructure: Some rural areas don't have telecommunication infrastructure to enable them to conduct transactions easily, thus the call for investment by both the government and the private sector.

5 Conclusions and Recommendations

This study has shown that there is a link between financial inclusion and emerging technology governance frameworks. That financial inclusion significantly contributes to economic growth by strengthening the financial system and positively impacting GDP per capita. The study suggests that an inclusive financial sector drives economic development. This relationship works by providing broader access to financial services, which fosters investment, entrepreneurship, and consumption. Increased access to financial resources for individuals and businesses can lead to increased economic activity and, ultimately, economic growth. Therefore, the access theory emphasizes that, expanding access to formal financial services empowers individuals and businesses to participate more actively in the economy, leading to increased investment, savings, and overall economic growth. In Zambia, improving financial services access, particularly in rural and low-income areas, can unlock entrepreneurial potential, stimulate investment, and spur economic growth.

This result also shows that mobile banking is covering a big market share compared to conventional banking. Thus, the growth in agency services on mobile money platforms has facilitated improvements in financial inclusion. The rise in mobile money accounts has been particularly impactful, facilitating financial transactions for previously unbanked and underserved populations. The study further concludes that individuals, SMEs with access to financial services are better positioned to invest in their businesses, create jobs, and contribute to overall economic diversification. Further, the broader adoption of digital financial services has been shown to stimulate economic activity, particularly among low-income populations, by reducing transaction costs and increasing efficiency (Fundji, 2024). In conclusion, Mobile money, Agent Banking and Bank to wallet were determined as the most popular NFIS tools in Zambia. The respondents indicated that these tools have made it easy for both rural and urban communities to transfer money, purchase airtime, and pay bills.

In line with objective 1, the study recommends government through the Ministry of Finance may consider building stronger regulatory frameworks to address risks, enhance transparency, and protect users. This indicates a need for transparent, inclusive policy design and stakeholder engagement to build confidence and ensure sustainable fintech growth. The study emphasizes that strengthening regulatory frameworks through the Ministry of Finance is crucial for mitigating fintech risks, ensuring transparency, and safeguarding users. Transparent, inclusive policy design supported by active stakeholder

engagement fosters trust and sustainability in fintech ecosystems. Robust regulations also enhance data privacy and compliance, particularly in digital credit, while promoting innovation within responsible boundaries. Blockchain technology can further support these goals by improving auditability and reducing fraud. Ultimately, coordinated governance ensures long-term resilience and equitable access in financial services.

In line with objective 3, the study recommends that government through the Ministry of Finance may consider building training and sensitization programs for the masses and financially excluded. Despite evidence that financial inclusion reduces poverty and inequality by improving access to credit, savings, and insurance, respondents show low perception of its impact likely due to financial illiteracy, lack of trust, and limited Fintech awareness. While digital banking offers immediate complaint resolution, users may not recognize this benefit, possibly because of poor user experience or inadequate communication about service capabilities. Bridging the perception gap requires targeted financial education, inclusive design, and transparent customer support systems.

In line with objective 3, the study recommends that expanding telecommunications infrastructure in is essential for enabling digital transactions and financial inclusion. While government investment lays the foundation, private-sector participation often drives scalable and sustainable development, as seen in global trends where private funding far exceeds public spending. Innovative low-cost solutions, such as store-and-forward email systems, have emerged in regions with limited connectivity, demonstrating adaptability despite infrastructure gaps. Bridging this divide requires coordinated policy, incentives for private investment, and targeted deployment of affordable technologies to empower rural economies.

Declaration of Competing Interests

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Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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