

Perceived Trust and Digital Financial Inclusion in Zambia's Informal Markets: Mediating and Moderating Role of Digital Financial Literacy and Digital Financial Efficacy

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Abstract

The aim of the research was to examine the effects of perceived trust on digital financial inclusion mediated by financial self-efficacy and moderated by digital financial literacy. The research focused on informal market traders at the Lusaka City Market. The explanatory research design was employed. Data was gathered using Likert-based structured questionnaires administered to a sample of 361 informal market traders. The stratified random sampling technique was employed. Data was analysed using the Hayes' PROCESS version 4.2. The study found that perceived trust has significant positive impacts on digital financial inclusion. The study also found that financial self-efficacy significantly mediates the relationship between trust and digital financial inclusion whilst digital financial literacy significantly moderates the relationship between trust and digital financial inclusion. The study recommended for actors in the financial sector of Zambia to implement strategies that can aid in building, restoring and enhancing trust and confidence in digital products and services. The study also recommended the key players in the Zambia's financial sector including the government to implement financial education programmes targeting informal market traders to enhance digital financial literacy.

Keywords: Digital financial inclusion, perceived trust, informal markets, Lusaka, Zambia, digital financial literacy

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1. Introduction

Recently, digital financial inclusion has gained prominence among practitioners, academia and policy makers (Tay, Tai and Tan, 2022). Due to the increasing financial innovations, there has been a significant shift of focus from the mere financial inclusion to digital financial inclusion. In developing economies, digital financial inclusion has been found key towards attainment of sustainable development goals (Demirgüç-Kunt et al., 2022; Ozili, 2022). Digital financial inclusion which refers to utilisation and adoption of digital financial services and products (Ozili, 2022) has been found key towards meeting the overall financial inclusion objectives. However, developing nations including Zambia are challenged by low levels of digital financial inclusion (Chinoda and Kapingura, 2024; Mpofo, 2023; Chibesa and Mwange, 2025). Although the Zambian Government has recognized the significance of digital financial inclusion through its Eighth National Development Plan (2022-2026) and the National Financial Inclusion Strategy (NFIS) II (2024-2028), the levels of digital financial inclusion tend to be low compared to other countries in Sub-Sahara Africa (Bank of Zambia, 2024).

Usage and uptake of digital financial services in Zambia has been found to be low in the informal sector (Inwiko, 2024; Chibesa and Mwangi, 2025). Existing evidence shows that about 30-40% of informal sector players utilise digital financial services and products (Bank of Zambia, 2024; Inwiko, 2024). In addition, it is highlighted in the NFIS II [2024–2028] that financial inclusion in the informal sector of Zambia decreased from 37.9% in 2015 to 32.2% in 2023. This decline has been found a threat to attainment of the NFIS II (2024–2028) target of making sure that 80% of the adult population is formally financially included by the year 2028. This has been a concern to policymakers leading increased efforts to enhance digital financial inclusion in the informal sector of Zambia. In this regard, promoting digital financial inclusion has recently become one of the national policy agenda in Zambia where building and restoring trust has been one of the objectives. However, lack of confidence and lack of digital financial literacy have emerged as the key factors inhibiting implementation of strategies to drive uptake of digital financial services and products in Zambia (Inwiko, 2024; Chibesa and Mwangi, 2025). Previous studies have confirmed that trust alone without financial self-efficacy and financial literacy may not bring satisfactory outcomes on digital financial inclusion (Inwiko, 2024; Noor et al., 2022). However, there is lack of empirical knowledge on the effects of trust on digital financial inclusion mediated by financial self-efficacy and moderated by digital financial inclusion. This is the knowledge gap which this study sought to address by examining the mediating and moderating roles of financial self-efficacy and digital financial literacy on trust and digital financial inclusion of informal market traders in Zambia.

2. Theoretical Framework and Hypothesis Development

2.1. Understanding Social Media and Its Evolution

Theoretical framework

The main theories directing the research are the Systems theory of financial inclusion, the financial literacy theory and the self-efficacy theory. The systems theory states that financial inclusion can be driven by existing sub-systems including economic, financial and social systems which influence usage and adoption of formal financial products (Ozili, 2020; 2024). In this regard, perceived trust, literacy and self-efficacy represent social sub-systems that can influence financial inclusion. On the other hand, the self-efficacy theory by Bandura (1977) state that self-efficacy motivates individuals to engage in a particular behaviour, in this case digital financial inclusion. The financial literacy theory predicts that in order to make informed financial-related decisions, individuals need to have satisfactory knowledge for various financial services, products and/or related risks (Gallery, Newton and Palm, 2011). The three theories were found relevant to explain the impacts of financial self-efficacy, perceived trust and financial literacy on digital financial inclusion.

2.2. Perceived trust and digital financial inclusion

Perceived trust has been found to have a significant effect on financial inclusion. According to Chawla et al. (2023), perceived trust plays a substantial role in driving adoption and utilisation of digital Fintech products and services in India. In the context of Pakistan, Noreen, Ghazali and Mia (2021) found that perceived trust was a significant factor for mobile money adoption. Anane and Nie (2022) also revealed that trust has significant positive influence on digital financial services' usage and adoption. Museba, Ranganai and Gianfrate (2021) also found that trust play significant role in adoption and utilisation of digital financial services and products in Uganda. In the context of Vietnam, Ha, Şensoy and Phung (2023) also found that perceived trust is a key factor that influence the intentions to use mobile money services. Alalwan et al. (2016) also revealed that trust is a significant factor for predicting usage and adoption of telebanking. Broekhoff et al. (2024) concluded that trust plays a significant role in driving digital financial inclusion. From this theoretical background, the study hypothesised that:

H₁. Perceived trust has significant positive impacts on digital financial inclusion

2.3. Mediating effects of financial self-efficacy on trust and digital 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 digital financial inclusion. According to Shiau et al. (2020), when individuals have trust in digital 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 digital financial products and services.

Sumartini et al. (2024) found that self-efficacy coupled with trust increases the intentions to use digital 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 digital financial products and services. From this, financial self-efficacy can have an intermediary role in the relationship between perceived trust and digital financial inclusion. Despite extant literature supporting the significance of financial self-efficacy in building trust and driving digital financial inclusion, few researches have examined how financial self-efficacy mediates the nexus between perceived trust and digital financial inclusion of informal traders. Hence, this study aimed to address the knowledge gap in the context of informal market traders in Lusaka, Zambia by hypothesizing that:

H₂. Financial self-efficacy mediates the relationship between perceived trust and digital financial inclusion.

2.4. Moderating effects of digital financial literacy on trust and digital financial inclusion

Recent studies have highlighted the moderating impacts of digital financial literacy on adoption and utilisation of digital financial products and services. According to Angeles (2022), individuals with higher levels of financial literacy are more likely to trust and adopt digital financial products and services leading to enhanced financial inclusion. Studies by Noor et al. (2022) and Mindra and Moya (2017) also found that financial literacy is a significant moderator for financial inclusion. The study by Vijayakumar (2024) also found significant moderating effects of digital literacy on adoption of digital financial services. Adhikari, Ghimire and Lama (2024) confirmed significant moderating effects of digital financial literacy on digital financial inclusion. As noted by Chibesa and Mwangi (2025) and Mwangi (2021), digital financial literacy has the potential to enhance trust in digital financial products and services as well as fostering digital financial inclusion. Shehadeh, Dawood and Hussainey (2024) believed that when individuals have financial literacy, they are more likely to have trust in digital financial systems leading to broader adoption of digital financial products and services. In light of this theoretical and empirical background, the study hypothesized that:

H₃. Digital financial literacy moderates the relationship between perceived trust and digital financial inclusion

2.5. Conceptual model

The conceptual model for the study is shown in Figure 1.

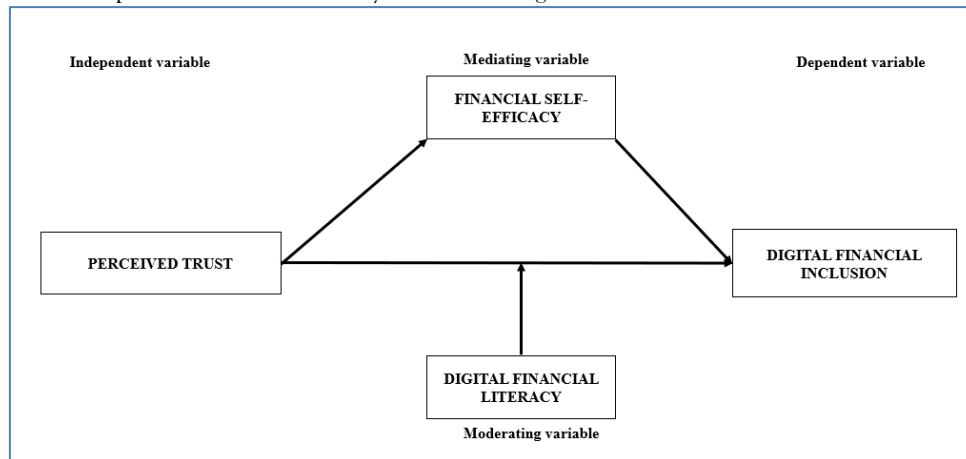


Figure 2: Conceptual framework (Source: Authors, 2025)

3. Research Gaps Identified

3.1. Research Design

The study followed the quantitative methodology employed the causal or explanatory research design which is considered the most suitable design for researches that examine causal interrelationships between variables (Schindler, 2022). The design was specifically employed to explain the effects of perceived trust on digital financial inclusion mediated by financial self-efficacy and moderated by digital financial inclusion.

3.2. Study Area

The study was carried out at the Lusaka City Market (LCM) situated in central business district of Lusaka city. The market has the capacity to accommodate 4,000 informal traders and is made up of 6 sections identified by colours namely Light Yellow, Green, Purple, Yellow, Pink and Dark Yellow. Each of section has 610 stands which translate to total of 3,660 stands (Lusaka City Council, 2023).

3.3. Population and sampling

The population was drawn from all the 3,660 informal traders who operate the 3,660 stands of the Lusaka City Market. For this quantitative survey study, the sample size was determined using the Yamane's (1973) formula ($n = \frac{N}{1+Ne^2}$). Given the population size (N) of 3,660 and sampling error margin of 5% (e), the minimum sample size (n) for the study was found to be 361.

3.4. Data Collection Instruments and Procedures

The collected primary quantitative data using structured survey questionnaires administered to informal traders at the Lusaka City Market. The 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree) was employed. The variables were measured using validated scales adapted from previous studies as summarised in Table 1.

Table 1: Measurement of variables

Variable	Number of Items	Source
Digital financial inclusion (DFI)	7	Khamis, 2021; Sharimakin and Akinlo, 2024
Digital financial literacy (DFL)	6	Baistaman et al., 2020
Financial self-efficacy (FSE)	6	Nguyen, 2016
Perceived trust (PT)	7	Bongomin and Ntayi, 2020; Chawla et al., 2023

Prior the data collection, the researcher sought authorization from the university as well as permission from the Lusaka City Market. The researcher also employed five trained research assistants who assisted in data collection particularly helping with administering of the questionnaires. That collection was done in the month of November 2024 and the data collection process was completed in a period of two weeks.

3.5. Validity and Reliability

The questionnaire was pilot tested to a small sample of 35 informal market traders who were not part of the actual sample. This aided in enhancing validity and reliability. In addition, the Cronbach's alpha (α), composite reliability (CR) and average variance extracted (AVE) were computed to determine validity and reliability as indicated in Table 2. The statistics were greater than 0.7 implying validity and reliability (Hair et al., 2015).

Table 2: Validity and reliability statistics

Construct	N of Items	α	CR	AVE
Digital Financial Inclusion	7	0.749	0.711	0.728
Digital Financial Literacy	6	0.910	0.904	0.769
Financial Self Efficacy	6	0.794	0.759	0.784
Perceived Trust	7	0.782	0.759	0.742

3.6. Data Analysis

Data was analysed using the Hayes' (2017) PROCESS Macro version 4.2 via the Statistical Package for Social Scientists (SPSS) version 29 software. Precisely model 5 was estimated under the 5,000 bootstrapping method. The 95% confidence interval was employed and the decision criteria for rejecting the hypotheses were based on the 5% level of significance.

3.7. Ethical Considerations

The study adhered to all the ethical issues pertaining data collection, protection and analysis throughout the study including informed consent, authorization and permission, confidentiality and anonymity and avoidance of harm.

4. Results and Discussion

4.1. Response rate

The authors physically administered a total of 361 questionnaires to informal market traders at the Lusaka City Market. However, 43 questionnaires were not returned whilst among the 318 returned questionnaires, 31 had missing data. As a result, 287 valid questionnaires were retained for analysis translating to survey response rate of 79.5%.

4.2. Demographic characteristics of participants

From the findings, 59% of the participants were females whilst 41% were males whilst 43% were aged between 25 and 35 years. In terms of education, 50% had attained tertiary education whilst 39% had secondary education. Additionally, most of the participants (69%) had average monthly incomes between ZMW2,000 and ZMW3,000.

4.3. Analysis and discussion of results

The results from the analyses are presented in Table 3 and Table 4. Table 3 shows the results from the bivariate correlation analysis.

Table 3: Pearson's correlation results

	Digital financial inclusion	Digital financial literacy	Financial self-efficacy	Perceived trust
Digital financial inclusion	1.00			
Digital financial literacy	0.353**	1.00		
Financial self-efficacy	0.610**	0.585**	1.00	
Perceived trust	0.456**	0.215**	0.450**	1.00

The results in Table 3 show the zero-order Pearson correlations between the variables. The results show statistically

significant correlations between the dependent, independent, moderating and mediating variables implying feasibility of moderation and mediation analyses based on Baron and Kenny (1986) criteria for mediation and moderation analyses. The results from the mediation and moderation analyses showing the results for the direct, indirect and total effects are presented in Table 4.

Table 4: Hypothesis testing results

Relationship	Path coefficient	t-value	p-value
Perceived trust → Digital financial inclusion	1.07	5.33	0.000
Financial self-efficacy → Digital financial inclusion	0.19	9.33	0.000
Digital financial literacy → Digital financial inclusion	1.05	4.76	0.000
Perceived trust x Digital financial literacy → Digital financial inclusion	-0.26	-4.79	0.000
Perceived trust → Financial self-efficacy	0.70	8.50	0.000
Perceived trust → Financial self-efficacy → Digital financial inclusion	0.26	3.22	0.000

The results in Table 4 indicate significant positive direct effects of perceived trust (PT) on digital financial inclusion ($\beta = 1.07$; $t = 5.33$; $p = 0.000$). Further, the results revealed significant positive direct effects of financial self-efficacy ($\beta = 0.19$; $t = 9.33$; $p = 0.000$) and digital financial literacy ($\beta = 1.05$; $t = 4.76$; $p = 0.000$) on digital financial inclusion. The interaction term (Perceived trust x Digital financial literacy) shows the significant moderating effects of digital financial literacy on digital financial inclusion ($\beta = -0.26$; $t = -4.79$; $p = 0.000$). The results also show that perceived trust has significant positive impacts on financial self-efficacy ($\beta = 0.70$; $t = 8.50$; $p = 0.000$). Lastly, the results showed that financial self-efficacy has a significant mediating effect on perceived trust and digital financial inclusion ($\beta = 0.26$; $t = 3.22$; $p = 0.000$). The results supported the three hypotheses of the study.

The findings indicated that perceived trust, financial self-efficacy and digital financial literacy have significant positive impacts on digital financial inclusion. The results mean that trust in financial products and services, digital financial literacy and financial self-efficacy are significant determinants for enhanced digital financial inclusion of the informal market traders in Lusaka, Zambia. The findings corroborate the findings by Chawla et al. (2023), Ha et al. (2023) and Museba et al. (2023) that perceived trust plays a substantial role in driving adoption and utilisation of digital financial products and services.

Furthermore, the findings show that financial self-efficacy play a significant intermediary role in the relationship between perceived trust and digital financial inclusion. The results imply that trust cannot have significant impacts on digital financial inclusion without financial self-efficacy, that is confidence in digital financial products and services. The findings validate the Bandura's (1977) self-efficacy theory. Scholars such as Jose and Ghosh (2024) also found that financial self-efficacy play a significant intermediary role on trust and digital financial inclusion.

The results revealed that digital financial literacy moderates the effects of trust on digital financial inclusion. These results mean that the low levels of digital financial literacy can significantly and adversely reduce trust in digital financial products and services thereby inhibiting digital financial inclusion. The results concur with the financial literacy theory. In addition, the findings agree with Chibesa and Mwangi (2025) that digital financial literacy has the potential to enhance trust in digital financial products and services as well as fostering digital financial inclusion.

5. Conclusion and Recommendations

5.1. Conclusions

The aim of the research was to examine the effects of perceived trust on digital financial inclusion mediated by financial self-efficacy and moderated by digital financial literacy. The study employed the explanatory research design. The results led to the conclusion that perceived trust is a significant predictor for digital financial inclusion of informal market traders in Lusaka, Zambia. The study also concluded that financial self-efficacy plays a significant intermediary role between trust and digital financial inclusion whilst digital financial literacy negatively moderates the relationship between trust and digital financial inclusion.

5.2. Recommendations

The results led to the following recommendations for policy and practice.

1. The study recommended for actors in the financial sector of Zambia to implement strategies that can aid in building, restoring and enhancing trust and confidence in digital products and services. This will aid in driving increased utilisation of digital financial products and services by informal market traders.
2. The study recommended the key players in the Zambia's financial sector including the government to implement financial education programmes targeting informal market traders to enhance digital financial literacy.

5.3. Limitations and areas for further research

The research was not exhaustive as it had its own limitations which necessitate further research. Firstly, the research recommends for further research to focus on a large sample of informal markets or carrying out similar researches in other

informal markets in Zambia.

Conflict of Interest

The authors declare that they have no conflicting interests

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Ethical considerations

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

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