



Effects of Fin-Tech Literacy Promotion on Small and Medium Scale Enterprises among Rural Citizens of Oyo State, Nigeria

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Abstract:

The cashless monetary policy introduced in 2022 by the Nigerian government had serious effect on the citizen especially the citizens in rural areas due to relative literacy level of the policy implementation among the citizens. Based on this, this study investigated the effects of Fin-Tech literacy promotion on small and medium scale enterprises among rural citizens of Oyo State, Nigeria. The descriptive survey research design was adopted. The population comprised participants from 21 local government areas of Oyo State, with a sample size of 4200 respondents randomly selected from the Ido, Akinyele, Ona-Ara, Lagelu, Oluyole, Egbeda, Ibarapas, Orelope, Oke-Ogun). A questionnaire of thirty (60) items on the Fin-Tech literacy promotion on small and medium scale enterprises Scale ($r=.78$) was used for the study. Data were analysed using multiple regression and descriptive statistics of frequency counts and simple percentages at a 0.05 level of significance. The study's findings revealed that the Fin-Tech literacy adoption has a significant positive effect on SMEs' business sustainability ($F(1, 4198) = 3675.21$; $R^2 = 0.372$) and jointly accounted for 37.2% of its variance. Based on the findings, it was recommended that the government, the developers and other involved parties should focus on solutions based on USSD codes, not just on mobile apps filled with data. Given a highly fragmented and sporadic internet access across the deep rural areas of Oyo, encouraging USSD-based FinTech literacy would help entrepreneurs who only have access to basic feature phones (non-smartphones) not to be left behind in knowledge sharing and business management in the digital age. This is an original study conducted at the Oyo State, Nigeria on Fin-Tech literacy promotion on small and medium scale enterprises and digital information services.

Keywords: Fin-Tech literacy promotion, small and medium scale enterprises, cashless monetary policy, rural citizens, Oyo State, Nigeria

Introduction

Small and Medium Scale Enterprises constitute the greater percentage of the entire national populace, Nigeria is blessed with adequate human and material resources, a good number of the populace involve in trading, self-employability is advocated in the nation hence price and cost of business is determined by the government economic policies.

In other words, CBN's cashless policy is targeted at enabling people to pay for goods and services without the use of physical cash but it does not mean that cash or consider of any kind is no longer in existence.

Surprisingly, the Nigerian central bank came up with a policy that no individual and business should withdraw up to N500, 000 and N3, 000, 000 respectively from their accounts in a day and any sum beyond the approved amount attracts a non-refundable charge of 3% for individual and 5% for business entities on such daily withdrawal, the banks are pushing to minimize (but not eliminate) the usage of physical cash (notes) in the country. Also, a third-party cheque over N150,000 cannot be cashed over the counter. The cheque is income for banks. The policy is aimed to reduce branch networks and incidents of armed robbery. This helps to impact on the security of the people because there is the responsiveness of the banking services, which means no individual needs to waste time on queues in the bank to withdraw or deposit money. This saves time and increases productivity hours (CBN: 2012, guidelines on cashless policy). Fatogun and Ajao (2023) viewed a cashless economy as “one that is assumed to be no transaction frictions which can be reduced through the use of money balances and accordingly provide a reason for holding such balances, even when they earn rate of return

However, numerous small and medium-scale enterprises^[1] are facing severe difficulties and on the verge of collapse. This space for operations and acceptance was the result of the fact that most small- and medium-scale business owners were caught unawares by the challenges brought on by financial-technology (fintech) illiteracy, and those in rural communities were effectively cut off from commerce, leaving the people under intolerable strain. Vibrations in the economic policies are imperative for the sustainable growth and development of business.

Technology offers you real-time insights and feedback on your financial planning, which allows you to take actions on the basis of information. With the help of technology, you can now get instant updates on your account balance, you can use technology to analyze your spending habits on your phone, and receive alerts whenever you have a bill due, technology gives you the ability to be organized and in control all day, every day. This near-instant feedback mechanism breeds a higher level of mindfulness and responsibility that leads to more informed financial decisions. The way that we teach financial literacy is being transformed by technology--making it more available, individualised and interactive. By utilizing the technology, you have the knowledge and skills to manage the complexities of personal finance and work towards your financial goals. Peter, Bihong and Long (2019) define financial technology (fin-tech) as the application of software, applications and digital platforms to provide financial services to consumers and businesses using digital channels including smartphones, emerging as a digital solution to enhance financial inclusion, i.e. the provision of financial products and services to underserved households and small firms. However, imagine the lives of those lacking the knowledge or ability to properly use the technology or access the information.

The use of financial technology (fin-tech) has elevated digital financial literacy to an important topic for adult educators as a crucial literacy. Fintech incorporates both the technology and delivery of financial services beyond traditional methods

(Goldstein et al., 2019). Further, fin-tech has been pivotal to innovation in the financial services and industry dramatically influencing our economic lives. Fintech allows for a plethora of options to users in terms of online banking, mobile payments, app-based investing platforms, and online shopping for a broad range of goods and services (Goyal & Kumar, 2020).

It is said globalisation Economic was the hygienic factor, living in the city, access to a large number of infrastructure to urban living standards, rural residents may be provided with urban living standards, but on the business side, there is a need to take their business activities because they are the provider of raw materials to large-scale business enterprises. Fintech has disrupted the traditional banking sector and has opened up new possibilities of innovation in financial services (Reinemann & Shalek, 2015). The expansion of fin-tech is giving consumers more ways to spend, invest and borrow money (EY, 2017). It has also led to a new class of financial services firms that compete with traditional banks and financial institutions (Reinemann & Shalek, 2015). Fintech is the innovation enabled by using digital technology on financial products and services. It has had an impact on the traditional banking and financial sector but at the same time, has led to new services and innovations in financial services sector. Given the continuous development in the use of technology, the fin-tech sector will continue to attract consumers with easier and more convenient financial services. But fin-tech literacy promotion among rural citizens in the SMEs has seen a blow in acceptability and adoption. Scholars in the fields of finance, literacy, adult education, business management and related disciplines (Peter, Bihong and Long 2019; Goyal & Kumar, 2020; Goldstein, 2019; Fatogun and Ajao 2023) have written on financial and technology literacy and more, but examination of Financial-Technology Literacy promotion on business sustainability of small and medium scale enterprises in rural areas are being underestimated. Thus, this study intends to investigate the effects of Fintech literacy promotion on small and medium scale enterprises among rural citizens in Oyo State, Nigeria. In order to determine the above, objectives were formulated to guide the study.

The specific objectives of this study are to establish (1) how the Fin-Tech literacy adoption has effect on SMEs' business sustainability among rural citizens in Oyo State, Nigeria (2) examine the acceptance of fin-tech on small and medium scale enterprises among the rural citizens in Oyo State, (3) find out critical factors facilitating or hindering fin-tech delivery and (4) investigate strategies/channels for promoting fin-tech literacy on small and medium scale enterprises among rural citizens in Oyo State, Nigeria.

Theoretical framework

Several studies have adopted or adapted theoretical frameworks to underpin their studies in relation to entrepreneurship, business management and financial technology. The present study adopted two theories that is Technology Acceptance Model (TAM) and Institutional Theory.

Technology Acceptance Model (TAM)

The Technology Acceptance Model has been recognized as an one of the best models among IS theories to explain the user's adoption and usage of technology. The TAM is the best known, the most influential, and by far the most widely applied theoretical model predicting individual acceptance of IS (Lee et al. TAM considers

two main factors that lead individuals accept technology: perceived usefulness and perceived ease of use. Perceived usefulness of a technology is the extent to which an individual believes that using that technology would enhance his or her performance. Perceived ease of use is the level at which a user believes that the technology is easy to learn and use. Regarding fin-tech and SMEs in Nigeria, perceived usefulness may be interpreted as the ability of fin-tech products to enable SMEs to enjoy improved financial inclusion, reduced transaction cost, enhanced efficiency, and better overall business performance. Perceived ease of use may consider such items as the complexity and user-friendliness of fin-tech applications, as well as the availability of training and support. Another relevant theory-based lens includes the Institutional Theory, which posits that the fin-tech adoption and utilization by SMEs is moderated by wider social norms and institutional standards.

Additionally, Institutional Theory is relevant in dealing with the fin-tech adoption and usage by SMEs, which is subject to wider social norms and institutional pressures. For instance, strong cultural attitudes towards traditional banking services can discourage SMEs from using fin-tech. On the other hand, in the presence of friendly regulatory framework, and an innovation culture, SMEs can have more chances to find the positive sides and get them through fin-tech. To that end, the impact of fin-tech on SMEs in Nigeria could be examined through a synthesis of these two theoretical paradigms. Because of a focus also on perceived usefulness and ease of use of fin-tech in the context of wider institutional factors surrounding the adoption of fin-tech, both researchers and practitioners will be able to gain a deeper understanding of both the drivers of adoption and the potential impact of fin-tech on SMEs.

Institutional Theory

The Institutional Theory can be used to analyse the effects of fin-tech on SMEs in Nigeria by assessing the influence of fin-tech innovations on the institutional context of SMEs. The institutional theory draws attention to the role of social norms, values and beliefs in organisational behaviours and strategic choices. Hence, in assessing the influence of fin-tech on SMEs in Nigeria, it is important for researchers to consider the effects of fin-tech solutions on the institution that SMEs are part of. Firstly, fin-tech is altering the institutional for SMEs in Nigeria environment by introducing new financial services and products, which were entirely unavailable. Owing to the emergence of fin-tech, Nigerian SMEs can now avail of financial products and services beyond the traditional ones, such as mobile payments, digital lending and online banking. With better access to financial services, SMEs can grow their businesses, invest and become more competitive.

Secondly, the institutional theory is that organizations comply with institutional pressures through isomorphism to become legitimate and accepted by other organizations. For fin-tech and SMEs in Nigeria, this would mean that SMEs support fin-tech innovations as a way to inform their stakeholders that they are still pursuing the current trend of technology and thus a credible business partner. This may make it possible for SMEs to take up innovations in fin-tech to increase the credibility and reputation of their firm even if they are not necessarily needed to get the firm on the road to success.

Thirdly, the institutional theory posits that organizations are

capable of resisting institutional change, when that change is inimical to its way of doing things. For fin-tech and SMEs in Nigeria, this means the potential resistance by the traditional financial institutions against fin-tech competing for financial services provision. This opposition might be regulatory or discredit fin-tech startups. It goes without saying, therefore, that the institutional theory offers an effective lens to analyze the influence of fin-tech on SMEs in Nigeria. By analyzing the manner and direction of changes of the institutional environment for SMEs with fin-tech innovations, we may understand the challenges and opportunities as these firms seek to survive in a rapidly evolving financial environment.

Methodology

Study Design

This research utilized a cross-sectional concurrent mixed methodology design, that is the QUAL+ quan design type, to examine the impact of Fin-Tech literacy simplification on small and medium scale enterprises within rural dwellers of Oyo State, Nigeria. With respect to fin-tech literacy promotion on small and medium scale enterprises among rural citizens, the quantitative part consisted of a descriptive cross-sectional survey to determine the extent of adoption, acceptability, barriers/enablers in the delivery toward fin-tech literacy and modes/means of delivering fin-tech literacy, whilst the qualitative was to complement information on participants' experiences and perceptions related to fin-tech literacy promotion. The population of this study consisted of small and medium scale enterprises in the rural areas in Oyo State, Nigeria.

Study Site

The study was carried out at the 21 local government areas comprised Afijio, Akinyele, Atiba, Atisbo, Egbeda, Ibarapa Central, Ibarapa East, Ibarapa North, Ido, Irepo, Iseyin, Itesiwaju, Kajola, Lagelu, Ogo-oluwa, Olorunsogo, Oluyole, Ona-ara, Oyo West, Saki East and Saki West. The local government areas represent rural areas of the three senatorial districts of Oyo with high concentrated small and medium scale enterprises. The local government areas were selected as rural areas based on the focus of the study. The selection of the areas will reveal the level of adoption, acceptance, factors facilitating or hindering fin-tech literacy delivery and strategies/channels for promoting fin-tech literacy on small and medium scale enterprises among rural citizens.

Study Population

The study population comprised rural citizens engaged in small and medium scale enterprises from 21 local government areas consist of Afijio, Akinyele, Atiba, Atisbo, Egbeda, Ibarapa Central, Ibarapa East, Ibarapa North, Ido, Irepo, Iseyin, Itesiwaju, Kajola, Lagelu, Ogo-oluwa, Olorunsogo, Oluyole, Ona-ara, Oyo West, Saki East and Saki West.

Sample Size and Sampling Technique

The quantitative component consisted of 4200 rural citizens engaged in small and medium scale enterprises from 21 local government areas of Oyo State, Nigeria.

A **simple random sampling technique** was employed to recruit participants for the study. Sample of 200 participants were selected from each local government areas chosen for the study which made up of 4200 rural citizens engaged in small and medium scale.

Instrument for Data Collection

The researchers created a questionnaire called the "Fin-Tech Literacy Promotion on Small and Medium Scale Enterprises Scale" (FTLPSSSES) with four sub-scales: Adoption, Acceptance, Factors facilitating or hindering and Strategies/channels for promoting fin-tech literacy on small and medium Scale. The questionnaire was divided into two sections: Session A gathered demographic data such as age (20 to 29 and 50 to 59 years above), gender, religion, educational qualification, business type and location. The second component was designed to respond to the research questions and objectives. The replies were scored on a four point Likert scale, with Strongly Agree (SA) equaling 4, Agree (A) equaling 3, Disagree (SD) equaling 2, and Strongly Disagree (D) equaling 1. Prior to participation, respondents were needed to check a consent form indicating that they were willing to participate in the survey. The study was given institutional approval with the ethical approval letter taken to field through the Ministry of Industry and Commerce of Oyo State permitted access to each local government areas. Then, they received a guarantee that the data they provided would be used solely for research purposes, as well as to assure their privacy and anonymity.

Validity and Reliability of the Instrument

Content validity, including face validity, was utilised to ensure the validity of the instruments used in this study. The items in the instruments were given in plain and straightforward language to aid respondents' comprehension. They were arranged logically and methodically to correspond with the research questions and objectives. To improve validity, the researcher additionally ensured that the instrument contents were aligned with the study's objectives and research questions. The instrument was piloted on two hundred (200) participants not part of the target population of this study but from other local government outside the scope of this study. The internal consistency reliability coefficient was determined using the Cronbach Alpha reliability technique to examine the instrument's reliability. This technique was chosen since the questionnaire items did not include correct or incorrect responses but instead needed respondents to assess their agreement or disagreement on a scale. The Cronbach Alpha reliability test produced coefficients of 0.75 for Adoption, 0.78 for Acceptance, 0.81 for Factors facilitating or hindering and 0.73 for Strategies/channels for promoting fin-tech literacy on small and medium scale respectively, showing that the instrument is acceptable, adequate, and reliable for the research.

Data Collection Procedure

Approval to conduct the study was obtained from the relevant authorities before commencement of data collection. Eligible rural

citizens engaged in small and medium scale enterprises from 21 local government areas of Oyo State informed about the purpose of the study, and written informed consent was obtained from all participants before administering the questionnaire. The questionnaires were self-administered. However, trained research assistants provided clarification to respondents where necessary to ensure accurate completion of the questionnaire. Completed questionnaires were retrieved immediately after completion to minimize non-response and incomplete data.

Data Analysis

Completed questionnaires were checked for completeness, coded, edited, and entered into the Statistical Package for the Social Sciences (SPSS) version 27 for analysis. Descriptive statistics, including frequencies, percentages, means, weighted mean scores, standard deviations, tables, and charts, were used to summarize respondents' socio-demographic characteristics and study variables. Inferential statistics comprising Pearson Product Moment Correlation and multiple regression analysis were employed to test the study hypotheses and determine the relationships between the independent variables and dependent variables among rural citizens engaged in small and medium scale enterprises. Statistical significance was established at $p < 0.05$.

Ethical Considerations

Ethical approval for the study was obtained from the **University of Ibadan Social Science and Humanities Research Ethics Committee** with approval reference number **UI/SSHREC/2026/138**. Written informed consent was obtained from all participants before data collection. Participation in the study was entirely voluntary, and respondents were informed of their right to decline participation or withdraw from the study at any stage without any consequences. Confidentiality and anonymity were maintained throughout the study by ensuring that no identifying information was recorded on the questionnaires. All information obtained from participants was used solely for research purposes and handled in accordance with established ethical principles governing research involving human participants. The study was strictly in accordance with declaration in the ethical approval. Informed consent was obtained from the respondents to participate in the current study.

Findings of the Study

The findings of this study are presented below, with the first research question in Table 1.

Research Question 1: How did the adoption of Fin-Tech literacy has affected business sustainability of SME among rural citizens in Oyo State, Nigeria? In determining the joint influence, a multiple regression analysis was run, and the result is displayed in Table 1

Table 1: Multiple Regression Analysis of Interpersonal Relationship

R=0.61						
R square = 0.372						
Adjusted R square = 0.372						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	845.32	1	845.32	3675.21	0.000
	Residual	1424.76	4198	0.34		
	Total	2270.08	4199			
a. Dependent Variables: Small and Medium Scale Enterprises among Rural Citizens						
b. Predictors: (Constant), Fin-Tech Literacy Promotion						

Table 1 presents results on the influence of adoption fin-tech on promotion of small and medium scale business among rural citizens of Oyo State. The multiple regression correlation coefficient (R) of 0.61, multiple R² of 0.372, and modified R² of 0.372, as shown in the table, indicate a linear connection between the independent and dependent variables. This indicates that 37.2% of the dependent variable was provided by the independent variable (Adoption); this difference is statistically significant at $P < 0.01$. Additionally, the multiple regression data's analysis of variance yielded an F-ratio of $F(1, 4198) = 3675.21$, which was significant at $P < 0.01$. The results of the multiple regression analysis demonstrated that there is a linear relationship between the dependent variable (promotion of small and medium scale business

among rural citizens of Oyo State) and adoption of fin-tech components, as indicated by the multiple regression correlation coefficients (R). Significant variance in the dependent variable (37.2%) was caused by the independent factors taken together. Furthermore, the outcome suggests that the residual variance may have been explained by additional factors that were left out of this model.

Research Question 2: To what extent the acceptance of fin-tech on small and medium scale enterprises among the rural citizens in Oyo State?

Table 2 shows a descriptive analysis of the acceptance of fin-tech on small and medium scale enterprises among the rural citizens in Oyo State.

Table 2: Willingness of accept Fin-Tech Literacy

SN	STATEMENT	SD	D	A	SA	Mean	Std Dev
1	I am open to participating in Fin-Tech literacy training if available.	33 (0.8%)	628 (15.0%)	2087 (49.9%)	1442 (34.3%)	3.17	0.71
2	I believe Fin-Tech literacy can improve my business operations.	29 (0.7%)	634 (15.1%)	2100 (08 (50.2%)	1429 (34.0%)	3.17	0.70
3	I am willing to invest time in learning new financial technologies.	27 (0.6%)	622 (14.8%)	2182 (52.0%)	1369 (32.6%)	3.17	0.69
4	I would attend community-based workshops on Fin-Tech usage.	35 (0.8%)	613 (14.6%)	2177 (51.8%)	1375 (32.7%)	3.16	0.70
5	I am ready to adopt mobile financial services after proper training.	29 (0.7%)	673 (16.0%)	2078 (49.5%)	1420 (33.8%)	3.16	0.71
6	I am interested in learning how to protect my finances online.	29 (0.7%)	632 (15.0%)	2130 (50.7%)	1400 (33.5%)	3.17	0.70
7	I support initiatives that promote Fin-Tech literacy in my area.	34 (0.8%)	618 (14.7%)	2118 (50.4%)	1430 (34.0%)	3.18	0.70
8	I believe digital literacy is crucial for business growth.	36 (0.9%)	625 (14.9%)	2146 (51.1%)	1393 (33.2%)	3.16	0.71
9	I am willing to recommend Fin-Tech training to other business owners.	32 (0.8%)	641 (15.3%)	2116 (50.4%)	1411 (33.6%)	3.17	0.70
10	I would prefer regular updates on Fin-Tech innovations.	29 (0.7%)	670 (16.0%)	2150 (51.2%)	1351 (32.2%)	3.15	0.71

The findings reveal a consistently high level of willingness among SMEs to accept Fin-Tech literacy packages, with strong agreement recorded across all items.

The results show that openness to participating in Fin-Tech literacy training is very high among respondents. A combined 84.2% of respondents expressed agreement, while only 15.8% disagreed. The mean score of 3.17 indicates a strong positive disposition toward engaging in structured Fin-Tech learning opportunities. In a similar vein, respondents overwhelmingly believe that Fin-Tech literacy can improve their business operations. Approximately 84.2% agreed, compared to 15.8% who disagreed. The mean value of 3.17 confirms that SMEs strongly perceive Fin-Tech knowledge as beneficial for enhancing efficiency and performance. The willingness to invest time in learning new financial technologies is also notably high. About 84.6% of respondents agreed, while 15.4% disagreed. With a mean score of 3.17, this reflects a strong readiness among SMEs to commit personal effort toward acquiring digital financial skills. Findings further indicate that participation

in community-based workshops is highly acceptable. A total of 84.5% of respondents agreed, compared to 15.4% who disagreed. The mean score of 3.16 reinforces the view that localized and accessible training formats are widely preferred. Similarly, readiness to adopt mobile financial services after proper training is strongly evident. Approximately 83.3% of respondents expressed agreement, while 16.7% disagreed. The mean value of 3.16 indicates that training is seen as a key enabler of technology adoption.

Interest in learning how to protect finances online also emerged strongly. About 84.2% of respondents agreed, while 15.7% disagreed. The mean score of 3.17 indicates a high level of awareness regarding the importance of digital financial security. The findings also show strong support for initiatives promoting Fin-Tech literacy. A combined 84.4% of respondents agreed, compared to 15.5% who disagreed. The mean score of 3.18, which is the highest in this section, reflects a broad endorsement of Fin-Tech literacy programmes. Furthermore, respondents largely

acknowledge the importance of digital literacy for business growth. About 84.3% agreed, while 15.8% disagreed. The mean value of 3.16 confirms that SMEs recognize digital competence as a critical driver of competitiveness. The willingness to recommend Fin-Tech training to other business owners is equally high. Approximately 84.0% of respondents agreed, compared to 16.1% who disagreed. The mean score of 3.17 reveals a strong likelihood of peer-driven diffusion of Fin-Tech knowledge. Finally, the preference for receiving regular updates on Fin-Tech innovations is also widely expressed. A total of 83.4% of respondents agreed, while 16.7% disagreed. The mean value of 3.15 indicates sustained interest in continuous learning and staying informed.

The findings clearly demonstrate that SMEs in rural Oyo State exhibit a remarkably high level of willingness to embrace Fin-Tech literacy, despite the relatively low levels of financial literacy observed. This contrast reveals a critical finding that the primary challenge is not resistance or lack of interest, but rather limited access to appropriate learning opportunities and enabling

Table 3: Factors facilitating or hindering fin-tech literacy delivery

SN	STATEMENT	SD	D	A	SA	Mean	Std Dev
1	Poor internet access affects my ability to use digital financial tools.	52 (1.2%)	767 (18.3%)	2189 (52.1%)	1192 (26.4%)	3.04	0.73
2	Lack of awareness hinders the uptake of Fin-Tech education in my area.	43 (1.0%)	731 (17.4%)	2196 (52.3%)	1231 (29.3%)	3.10	0.70
3	Cultural beliefs influence how Fin-Tech training is received.	37 (0.9%)	768 (18.3%)	2212 (52.7%)	1183 (28.2%)	3.08	0.70
4	Availability of Fin-Tech trainers is limited in my locality.	57 (1.4%)	779 (18.5%)	2186 (52.0%)	1178 (28.0%)	3.07	0.73
5	Electricity supply affects my participation in Fin-Tech training.	66 (1.6%)	769 (18.3%)	2191 (52.2%)	1174 (28.0%)	3.07	0.75
6	Language used in training materials affects my understanding.	41 (1.0%)	748 (17.8%)	2229 (53.1%)	1182 (28.1%)	3.09	0.69
7	The cost of Fin-Tech training discourages participation.	53 (1.3%)	778 (18.5%)	2155 (51.3%)	1214 (28.9%)	3.08	0.72
8	Government support increases access to Fin-Tech literacy programs.	44 (1.0%)	795 (18.9%)	2177 (51.8%)	1184 (28.2%)	3.07	0.71
9	Community involvement encourages wider Fin-Tech awareness.	39 (0.9%)	779 (18.5%)	2154 (51.3%)	1228 (29.2%)	3.09	0.70
10	Trust in the training providers enhances participation.	43 (1.0%)	795 (18.9%)	2166 (51.6%)	1196 (28.5%)	3.08	0.71

The findings indicate that respondents strongly acknowledge multiple structural, institutional, and socio-economic factors as significant barriers to Fin-Tech literacy delivery, with consistently high levels of agreement.

The results show that poor internet access is widely perceived as a major constraint. A combined 78.5% of respondents agreed, while 19.5% disagreed. The mean score of 3.04 indicates strong agreement that inadequate internet infrastructure significantly limits the use of digital financial tools. Similarly, lack of awareness is identified as a key hindrance to Fin-Tech education uptake. Approximately 81.6% of respondents expressed agreement, compared to 18.4% who disagreed. The mean value of 3.10, which is the highest in this section, confirms that insufficient awareness

structures. Particularly noteworthy is the strong support for community-based workshops, which indicates that SMEs prefer contextualized and accessible learning environments. This aligns with the realities of rural settings, where centralized or purely digital training models may be less effective.

Overall, the findings indicate that SMEs are ready and receptive, positioning them as active participants rather than passive beneficiaries in Fin-Tech literacy initiatives. This creates a strong foundation for policy intervention, as efforts directed toward improving access, affordability, and delivery mechanisms are likely to yield significant outcomes.

Research Question 3: What are the factors facilitating or hindering fin-tech literacy delivery among rural citizens on small and medium scale enterprises?

Table 3 shows a descriptive analysis of the factors facilitating or hindering fin-tech literacy delivery among rural citizens on their small and medium scale enterprises in Oyo State.

remains a critical barrier to effective Fin-Tech literacy dissemination. The influence of cultural beliefs on the reception of Fin-Tech training is also strongly acknowledged. About 80.9% of respondents agreed, while 19.2% disagreed. The mean score of 3.08 reveals that socio-cultural factors play a significant role in shaping attitudes toward digital financial education. Findings further indicate that the availability of Fin-Tech trainers is limited. A total of 80.0% of respondents agreed, compared to 19.9% who disagreed. The mean score of 3.07 reinforces the perception that inadequate human resource capacity constrains training delivery. In the same vein, electricity supply is perceived as a major factor affecting participation in Fin-Tech training. Approximately 80.2% of respondents agreed, while 19.9% disagreed. The mean value of

3.07 emphasise the importance of stable power supply in supporting digital learning environments.

The language used in training materials also emerges as a significant factor influencing understanding. About 81.2% of respondents agreed, compared to 18.8% who disagreed. The mean score of 3.09 indicates that language barriers can limit comprehension and effective knowledge transfer. The cost of Fin-Tech training is another notable constraint. A combined 80.2% of respondents agreed, while 19.8% disagreed. The mean score of 3.08 reveals that financial barriers discourage participation, particularly among resource-constrained SMEs. Furthermore, respondents strongly agree that government support enhances access to Fin-Tech literacy programs. About 80.0% agreed, compared to 19.9% who disagreed. The mean value of 3.07 reflects the perceived importance of institutional backing in expanding program reach. Community involvement is also recognized as a key enabler of Fin-Tech awareness. Approximately 80.5% of respondents agreed, while 19.4% disagreed. The mean score of 3.09 indicates that grassroots participation plays a crucial role in promoting awareness and acceptance. Finally, trust in training providers is identified as an important factor influencing participation. A total of 80.1% of respondents agreed, compared to 19.9% who disagreed. The mean value of 3.08 confirms that credibility and trust significantly affect engagement with Fin-Tech literacy initiatives.

The findings reveal that the challenges affecting Fin-Tech literacy delivery among SMEs in rural Oyo State are systemic, multi-dimensional, and deeply interconnected. The consistently high levels of agreement indicate that barriers are not isolated but rather operate simultaneously to constrain access, participation, and effectiveness. A major structural issue identified is the deficiency in digital infrastructure, particularly internet access and electricity supply. These factors form the foundational requirements for Fin-

Tech engagement, and their inadequacy significantly limits both the delivery and uptake of digital financial education. Without reliable infrastructure, even well-designed literacy programs are unlikely to achieve meaningful impact. Institutional limitations also emerge prominently, especially in terms of limited availability of qualified trainers and insufficient government support. These findings suggest that the ecosystem required to sustain Fin-Tech literacy initiatives is underdeveloped, thereby restricting scalability and long-term sustainability.

In addition, economic constraints, particularly the cost of training, pose a significant barrier. Despite the high willingness observed in the previous section, financial limitations prevent many SMEs from participating, reinforcing the need for subsidized or publicly supported programs. The influence of language and cultural factors highlights the importance of contextualization in program design. Training that does not align with local linguistic and cultural realities is less likely to be effective, as it limits comprehension and acceptance. This underscores the need for localized content and culturally sensitive delivery approaches. Furthermore, the importance of trust and community involvement suggests that social dynamics play a critical role in shaping participation. SMEs are more likely to engage with programs that are endorsed by trusted actors and embedded within familiar community structures. In essence, the challenge is not merely educational but ecosystemic, requiring coordinated efforts to create an enabling environment for effective Fin-Tech literacy delivery and adoption.

Research Question 4: What are the strategies/channels for promoting fin-tech literacy on small and medium scale enterprises among rural citizens in Oyo?

Table 4 shows a descriptive analysis of the strategies/channels for promoting fin-tech literacy delivery among rural citizens on their small and medium scale enterprises in Oyo State.

Table 4: Strategies/channels for promoting fin-tech literacy

SN	STATEMENT	SD	D	A	SA	Mean	Std Dev.
1	Regular workshops should be organized in rural communities.	27 (0.6%)	460 (11.0%)	2015 (48.0%)	1665 (39.6%)	3.27	0.65
2	Government agencies should fund rural Fin-Tech training programs.	30 (0.7%)	492 (11.7%)	2083 (49.6%)	1595 (38.0%)	3.25	0.67
3	Local influencers should be engaged to promote Fin-Tech literacy.	30 (0.7%)	492 (11.7%)	2083 (49.6%)	1595 (38.0%)	3.25	0.67
4	Schools and religious institutions can help spread Fin-Tech awareness.	21 (0.5%)	499 (11.9%)	2046 (48.7%)	1634 (38.5%)	3.26	0.64
5	Fin-Tech education should be included in adult literacy programs.	27 (0.6%)	539 (12.8%)	2047 (48.7%)	1587 (37.8%)	3.24	0.66
6	Mobile Fin-Tech training centers should be introduced.	23 (0.5%)	587 (14.0%)	1973 (47.0%)	1617 (38.5%)	3.23	0.68
7	Partnerships with telecom companies can ease training delivery.	18 (0.4%)	497 (11.8%)	2017 (48.0%)	1668 (39.7%)	3.28	0.63
8	Translations of Fin-Tech content into local languages are needed.	30 (0.7%)	467 (11.1%)	2075 (49.4%)	1628 (38.8%)	3.26	0.66
9	Subsidized mobile devices can boost Fin-Tech adoption.	28 (0.7%)	519 (12.4%)	2040 (48.6%)	1613 (38.4%)	3.25	0.66
10	A rural-specific Fin-Tech literacy policy is necessary for sustainability	22 (0.5%)	489 (11.6%)	2074 (49.4%)	1615 (38.5%)	3.26	0.65

The findings reveal strong consensus among respondents regarding practical strategies for improving Fin-Tech literacy among SMEs in rural Oyo State, as very high levels of agreement were recorded. The results show that regular workshops in rural communities are strongly supported as a strategy for improving Fin-Tech literacy. A combined 87.6% of respondents agreed, while only 11.6% disagreed. The mean score of 3.27 indicates a very high level of agreement that continuous community-based training can enhance digital financial knowledge. Similarly, respondents strongly agree that government agencies should fund rural Fin-Tech training programs. Approximately 87.6% of respondents expressed agreement, compared to 12.4% who disagreed. The mean value of 3.25 confirms that institutional funding is perceived as essential for expanding literacy initiatives. The engagement of local influencers to promote Fin-Tech literacy also received substantial support. About 87.6% of respondents agreed, while 12.4% disagreed. The mean score of 3.25 suggests that trusted local figures can play an important role in increasing acceptance and participation. Findings further indicate that schools and religious institutions are widely viewed as effective channels for spreading Fin-Tech awareness. A combined 87.2% of respondents agreed, compared to 12.4% who disagreed. The mean score of 3.26 reflects strong confidence in existing community institutions as dissemination platforms. The inclusion of Fin-Tech education in adult literacy programs is equally supported. About 86.5% of respondents agreed, while 13.4% disagreed. The mean value of 3.24 indicates that integrating digital financial education into ongoing literacy efforts is considered a practical strategy.

The introduction of mobile Fin-Tech training centres also received strong endorsement. Approximately 85.5% of respondents agreed, compared to 14.5% who disagreed. The mean score of 3.23 indicates broad support for decentralized and mobile learning systems. Partnerships with telecommunications companies emerged as one of the strongest strategies identified. A total of 87.7% of respondents agreed, while only 12.2% disagreed. The mean score of 3.28, the highest in this section, reflects a very strong perception that collaboration with telecom providers can improve training delivery. The translation of Fin-Tech content into local languages is also strongly supported. About 88.2% of respondents agreed, while 11.8% disagreed. The mean score of 3.26 indicates that language accessibility is seen as critical for effective learning. The provision of subsidized mobile devices to boost Fin-Tech adoption is another widely accepted strategy. Approximately 87.0% of respondents agreed, while 13.1% disagreed. The mean value of 3.25 indicates that affordability of technology remains an important consideration. Finally, respondents strongly agree that a rural-specific Fin-Tech literacy policy is necessary for sustainability. A combined 87.9% of respondents agreed, while 12.1% disagreed. The mean score of 3.26 confirms the need for policy frameworks tailored to rural realities.

The findings demonstrate a remarkably strong consensus among SMEs regarding the most effective strategies for promoting Fin-Tech literacy, indicating that respondents possess a clear understanding of the interventions needed to improve digital financial inclusion. A major finding is the strong preference for community-centered approaches, particularly regular workshops, mobile training centres, and the use of schools and religious institutions. This suggests that SMEs view Fin-Tech literacy as

most effective when delivered through familiar and trusted social structures, rather than through distant or purely digital systems. The strong support for government funding and policy intervention emphasises the perception that sustainable Fin-Tech literacy cannot rely solely on private initiatives. Another critical insight is the importance attached to telecommunication partnerships. Since telecom providers already possess network infrastructure, customer reach, and digital platforms, their involvement is perceived as a practical way to scale literacy programs efficiently across rural communities.

The high agreement on translation into local languages reveals the central role of contextualization in adult learning. Fin-Tech literacy cannot be effectively transferred if content remains linguistically inaccessible. This reinforces findings that language is a significant barrier to understanding. Similarly, the support for subsidized mobile devices reveals that digital exclusion is not only a knowledge issue but also an economic accessibility issue. Even when SMEs are willing to learn, lack of affordable technology can prevent adoption. Perhaps most significantly, the strong support for a rural-specific policy framework indicates that respondents understand that rural communities face unique barriers that differ from urban environments. In essence, the findings show that SMEs are not merely identifying problems; they are also pointing toward practical, context-sensitive solutions that can significantly improve Fin-Tech literacy outcomes in rural communities.

Discussion of findings

The first research question's findings indicate how the adoption of Fin-Tech literacy has affected business sustainability of SME among rural citizens in Oyo State, Nigeria. The results indicate that the adoption of Fin-Tech literacy contributed to the prediction of the business sustainability of SME among rural citizens in Oyo State, Nigeria, meaning that the adoption of Fin-Tech literacy accounted for 37.2% of the variation in the prediction of business sustainability of SME among rural citizens in Oyo State, Nigeria. This suggests that the adoption component taken into consideration, the business sustainability of SME among rural citizens in Oyo State, Nigeria will increase by 37.2%, with the remaining 62.8% of the variation being outside the purview of this study. Consequently, the adoption component has a 37.2% influence on business sustainability of SME among rural citizens in Oyo State, Nigeria. This research supports the findings of a study carried out by Islam, Muzi, and Meza (2018) which investigated whether the use of mobile apps increases business investment in Kenya, Uganda, and Tanzania and found that mobile app adoption increases the way companies work and it streamlined various business processes such as invoicing, payment processing, and inventory management.

The results of study question 2 indicate the acceptance of fin-tech on small and medium scale enterprises among the rural citizens in Oyo State. The results showed the acceptance of respondents in terms of believe that Fin-Tech literacy can improve their business operations, participation in Fin-Tech literacy training, perception that Fin-Tech knowledge is beneficial for enhancing their efficiency and performance, willingness to invest time in learning new financial technologies and preference for receiving regular updates on Fin-Tech innovations in their businesses. These results confirmed the results by Sharma, Ilavarasan and Karanasios (2023) which concluded that fintech platforms often provide educational

resources, tutorials, and insights to improve entrepreneurs' understanding of financial products. These results also concurred the findings by Sharma, Ilavarasan and Karanasios (2023) which indicated that Fintech solutions often streamline cross-border transactions, allowing small and medium-sized businesses to operate more efficiently internationally.

The results of study question 3 indicate that respondents strongly acknowledge multiple structural, institutional, and socio-economic factors as significant barriers to Fin-Tech literacy delivery, with consistently high levels of agreement. Poor internet access is widely perceived as a major constraint, lack of awareness, socio-cultural factors and language barriers. According to study that was done by Iliasov (2019), the results had indicated that lack of knowledge is a significant barrier to the adoption of mobile money services. Lack of knowledge and education has an adverse impact on the adoption of mobile money services. This study results were in line with the conclusion that was made by Olawale (2019) which had indicated that the convergence of technology and financial products provides an important link in improving financial literacy. For example, the recent popularity of electronic banking has given consumers increased access to financial products. These technology products may include direct deposit, computer banking, stored value cards, and debit cards. The findings by the Selvon and Kaestner Financial Literacy Study (2018) on the financial literacy of micro-entrepreneurs in South Africa which found that most businesses have limited use of technology.

The results of study question 4 indicate the strategies/channels for promoting fin-tech literacy on small and medium scale enterprises among rural citizens in Oyo which includes regular workshops in rural communities, government funding of rural Fin-Tech training programmes, schools and religious institutions support and the inclusion of Fin-Tech education in adult literacy programmes. These results confirmed those by Ogujiuba and Nwoko (2018) which recommended that by participating in financial coaching and advisory programs is another way for companies to maintain relationships that have a lasting positive impact on Fin-Tech solutions. These findings confirmed those by Anas and Cahyawati (2023) which concluded that by understanding the criteria for accessing credit, small businesses can gain better financial knowledge about their own financial health and what financial institutions look for in a viable business. Access to advanced knowledge, whether sourced internally or externally, enhances understanding of various critical factors, including new products and services, competing suppliers, and consumer preferences. Miswanto et al., (2024) also found a significant relationship between financial behaviour and sustainable performance. Moreover, the positive impact of financial behaviour on SME sustainability is supported by empirical evidence from various studies. Cardoni et al., (2020) emphasized that SMEs with robust financial management practices experience better financial outcomes and long-term success. Also, Buchdadi et al., (2020) found the positive impact of financial behaviour, access to finance, and financial risk attitude on the SME performance. This study's findings corroborate these assertions, indicating that Nigerian SMEs that prioritize good financial habits, such as regular financial monitoring and prudent investment decisions, tend to achieve sustainable performance.

Conclusion

The research results reveals that improving Fin-Tech literacy is crucial for financial sustainability and expansion of SMEs in rural Oyo state. There is a little spill over – with proximity to urban center such as Ibadan – but the “digital divide” remains stark for entrepreneurs in the countryside. The result reveals that Fin-Tech literacy i.e. Mobile under Money, Digital Wallet and P2P [peer-to-peer] Lending significantly and positively affect operational efficiency of rural SMEs.

The promotion has turned digital finance from a “risky urban luxury” to a “business necessity.” Fin-Tech SMEs that adopted Fin-Tech experienced a reduction in transaction costs and easier cash flow management from the fact that they did not have to travel physically to conventional banking halls. However, the results suggest that literacy is not enough. Promotion will promote “willingness” and “actual usage” will be influenced by the trinity of literacy, infrastructure, and trust. Therefore, the overall effect of promoting Fin-Tech literacy has been to create the opportunity for financial inclusion while the final effect is limited by systemic infrastructural limitations.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. “Vernacular” Digital Education Integration: The Oyo State Government should also, with the support of private FinTech companies operating in the State, (such as OPay, Moniepoint or PalmPay) organize community-based literacy classes in the local Yoruba language. To reduce the cognitive strain for rural merchants, abstract financial principles should be rendered into local business metaphores (i.g., Esusu schemes vs. digital savings).

2. “Offline-First” FinTech Solutions Deployment: Developers and other involved parties should focus on solutions based on USSD codes, not just on mobile apps filled with data. Given a highly fragmented and sporadic internet access across the deep rural areas of Oyo, encouraging USSD-based FinTech literacy helps make sure even entrepreneurs who only have access to basic feature phones (non-smartphones) won't be left behind into the digital world.

3. Creation of Rural “FinTech Resource Hubs”: The government should utilize the exiting LGA offices as Digital Support Centers. These centers would function as “help desks” for rural SME owners to get hands-on instruction in digital bookkeeping or paying taxes through FinTech platforms (without losing money to scammers), becoming a trusted institutional partner in rural communities.

4. Incentive Based Digital Adoption: To move from literacy to practice, the government should begin providing small-scale tax reductions to rural SMEs that demonstrate a certain percentage of their transactions are digital. This “push” factor and the “pull” factor of promoting literacy will speed up the transformation of a cash-free economy in rural areas.

5. More Active Cyber-Security Advocacy: The literacy lesson needs to progress beyond “how to use” and focus significantly on “how to protect.” Spreading the awareness of Two-Factor Authentication (2FA) and the risks of sharing OTPs (One-Time Password) is key to avoiding financial disasters that cause rural folk to abandon the progress they make every time they have a bad financial experience.

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Author's Contribution

B.A.F conceptualised and wrote the draft of the study, T.G.M, S.O.O, I.D.U, F.O and A.O worked on the methodology and Data collection; T.G.M did the interpretation of data. All authors reviewed the manuscript and approved its final version.

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Declarations

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