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Challenges of Financial Technology (FINTECH) Innovations of Small Enterprises in South-West, Nigeria

JOHNSON I. OKOH, OJEKA STEPHEN,
OLUFOLAKEMI OLUDAMI AFROGHA, MIJINYAWA AFEBUAMHE ADAMU
National Open University of Nigeria

Abstract. This study investigated the challenges affecting the adoption of financial technology (fintech) innovations among small enterprises in Southwestern Nigeria, with a focus on three critical factors: regulatory barriers, technological infrastructure, and financial literacy. The primary objective was to understand how these factors influence fintech adoption among small businesses and to identify potential strategies for enhancing financial inclusion and supporting SME growth. A quantitative research design was utilized, with data collected from a sample of 350 small enterprises across key urban centers in Ekiti, Lagos, Ogun, Ondo, Osun, and Oyo states. The sample size was determined using the Taro Yamane formula and stratified and simple random sampling techniques ensured representative data collection. The study formulated and tested three hypotheses aligned with the research objectives, using statistical analyses, including ANOVA, to evaluate the relationships between regulatory, infrastructural, and educational factors and fintech adoption. The findings reveal that regulatory barrier, such as complex compliance requirements and high costs, present significant obstacles to fintech adoption among SMEs. Furthermore, insufficient technological infrastructure, particularly in terms of reliable internet connectivity and stable electricity supply, limits access to fintech services. Financial literacy was also found to play an essential role, as SMEs with higher levels of digital financial understanding demonstrated greater fintech adoption rates. These results underscore the importance of targeted interventions: simplifying regulatory processes, enhancing infrastructure, and developing financial literacy programs to promote fintech engagement among SMEs. Such initiatives could foster financial inclusion, enhance SME productivity, and contribute to regional economic development. Future research is recommended to explore fintech adoption patterns across specific industries and investigate the impact of socio-cultural factors on digital financial engagement among SMEs.

Keywords: Fintech, Small Enterprises, Financial Inclusion

1. Introduction

Financial inclusion is a critical aspect of economic development globally, as it ensures that individuals and businesses, regardless of their size, have access to essential financial services. This access is particularly crucial for Small Enterprises, which are significant drivers of economic growth, innovation, and employment. Globally, Small Enterprises face challenges in accessing finance, which limits their potential for growth and sustainability. Financial technology, or fintech, has emerged as a promising solution to these challenges by offering innovative financial services that can bypass traditional banking barriers. Bello and Kamoru (2017) averred that an inclusive financial structure is a global economic policy, seen as a strategic tool for poverty alleviation, promoting the development of Small Enterprises, and sustaining economic growth. They noted that the financial exclusion of Small Enterprise investors has contributed to a high rate of SME failures and increased poverty in Nigeria.

Internationally, the fintech revolution has been transformative. Countries like China, India, and Kenya have seen significant advancements in financial inclusion through mobile banking and digital payment platforms. For example, Kenya's M-Pesa has revolutionized access to financial services, allowing millions of unbanked individuals and small businesses

to participate in the formal economy. Similarly, in India, the widespread adoption of digital payment systems and online lending platforms has significantly improved financial access for small enterprises. These global examples highlight the potential of fintech to bridge the financial inclusion gap, particularly in developing economies. Akande, *et al* (2023) asserted that the use of fintech ensures that relevant information and services are accessible to all stakeholders. Regarding the success of small enterprises, financial technology has made significant contributions through innovations in various banking systems such as POS, ATM, mobile banking, internet banking, with opportunities to enhance their performance both financially and non-financially. Numerous studies highlight the crucial role of mobile banking and agents in certain models, consistently demonstrating that financial technology increases efficiency and reduces transaction costs.

However, the adoption and impact of fintech vary widely across different regions due to diverse regulatory, infrastructural, and socio-cultural environments. In Nigeria, and particularly in the Southwest region, fintech holds substantial promise for enhancing financial inclusion among small enterprises. The region is a commercial hub with a high concentration of small enterprises, which are essential to the local economy. Despite this, many small enterprises in Southwest Nigeria struggle with limited access to formal financial services, which hampers their growth and operational capacity. Nationally, Nigeria has seen significant growth in its fintech sector, driven by a young, tech-savvy population and increasing mobile phone penetration. The Central Bank of Nigeria has also implemented policies aimed at promoting digital financial services. However, several challenges persist. Regulatory uncertainty remains a significant issue, as the regulatory framework for fintech in Nigeria is still evolving. This uncertainty can stifle innovation and create barriers to entry for new fintech startups. Moreover, the existing regulations may not adequately address the unique needs and risks associated with fintech solutions.

Infrastructural challenges are another major concern. Despite improvements, there are still significant gaps in internet connectivity, electricity supply, and mobile network coverage, particularly in rural areas. These infrastructural deficiencies limit the reach and effectiveness of fintech solutions, especially for small enterprises operating outside major urban centers. Socio-cultural factors also play a crucial role. There is a prevalent lack of trust in digital financial services among many small enterprise owners, driven by concerns about security and fraud. Additionally, low levels of financial literacy impede the effective use of fintech solutions. Many small business owners are unfamiliar with the benefits and functionalities of digital financial services, which affects their willingness to adopt these technologies.

Despite the rapid growth and potential of financial technology (fintech) globally, its integration into the financial inclusion framework for Small Enterprises in Southwest Nigeria faces significant challenges. Small enterprises are vital to the Nigerian economy, driving innovation, employment, and economic growth. However, a substantial number of these enterprises remain excluded from formal financial services due to barriers such as inadequate access to credit, high transaction costs, and cumbersome banking procedures. Fintech, with its promise of innovative, efficient, and accessible financial solutions, presents an opportunity to bridge this financial inclusion gap. According to SMEDAN (2021), the National Policy on Micro, Small, and Medium Enterprises (MSMEs) in Nigeria defines small enterprises as those having between 10 and 49 employees and an asset base (excluding land and buildings) of between ₦5 million and ₦50 million.

Globally, fintech has revolutionized financial access in regions like East Africa and Southeast Asia, demonstrating its potential to transform economies by providing unbanked and underbanked populations with essential financial services. In contrast, Southwest Nigeria has not fully harnessed this potential, largely due to regulatory, infrastructural, and socio-cultural challenges. Regulatory uncertainties and a lack of clear guidelines for fintech operations create a challenging environment for fintech companies. Infrastructural issues, such as unreliable internet connectivity and electricity supply, further impede the widespread adoption of digital financial services. Additionally, low levels of financial literacy and trust in digital platforms among small business owners exacerbate the problem. The provision of a wider range of financial services in a given society enhances economic growth and upliftment. This can be achieved through various strategies designed to facilitate the delivery of financial services by financial institutions nationwide. Supporting this, Agelyne and Musau (2021) posited that financial inclusion significantly contributes to reducing poverty levels among citizens. By aiming to serve as many people as possible, financial inclusion plays a crucial role in improving overall economic well-being.

The existing literature highlights the benefits of financial technologies in enhancing financial inclusion but often focuses on broader, more developed markets or other regions in Africa. There is a notable gap in

research specifically addressing the unique challenges faced by small enterprises in Southwest Nigeria. This gap includes a lack of detailed analysis on the regulatory environment, infrastructural deficiencies, and socio-cultural barriers that affect fintech adoption. Furthermore, there is limited research on effective remedial actions tailored to the specific context of Southwest Nigeria.

This study aims to fill this research gap by providing a comprehensive assessment of the challenges hindering fintech adoption by small enterprises in Southwest Nigeria. It seeks to identify and analyze the regulatory, infrastructural, and socio-cultural barriers that limit the effectiveness of fintech solutions. By doing so, the study will offer evidence-based recommendations for remedial actions to enhance fintech adoption and financial inclusion. The need to carry out this study is underscored by the critical role that small enterprises play in the economic development of Southwest Nigeria and the transformative potential of fintech. Addressing the identified challenges can lead to significant improvements in financial inclusion, thereby fostering small enterprises growth and contributing to broader economic development. This research will provide valuable insights for policymakers, fintech companies, and small enterprises stakeholders, guiding them towards creating a more inclusive financial ecosystem in Southwest Nigeria.

1.1 Research Objectives

The broad objective of this study is to examine the challenges of financial technology (fintech) adoption by small enterprises in Southwestern Nigeria and suggest possible remedial actions. The specific objectives are to:

- Analyze the impact of regulatory barriers on fintech adoption among small enterprises in Southwestern Nigeria.
- Evaluate the role of technological infrastructure in enabling or limiting fintech accessibility for small enterprises in the region.
- Investigate the influence of financial literacy on the adoption and effective use of fintech solutions by small enterprises in Southwestern Nigeria.

2. Literature Review

2.1 Conceptual Review

2.1.1 Small and Medium Enterprises (SMEs)

Small and medium-sized enterprises are referred to by the acronym SMEs. SMEs don't have a common definition. Various nations have defined SME due to different criteria. These include working capital, personnel count, turnover, and comparable indicators.

As mentioned in the 2007 study by Abereijo, Taiwo, Ilori, and Adegbite. Some characteristics that can be used to characterize SMEs are personnel count, capital invested, and employee turnover. The way that SMEs work in the economy and the policies and initiatives that specific organizations or authorities have put in place that have the ability to support SMEs all have an impact on how SMEs are defined. A small business can be referred to as a medium-sized or large-scale enterprise in developed countries like Nigeria, Germany, Japan, and the United States of America. Moreover, the definitions of SME by agencies and developing institutions also change over time based on their policy focus (Etuk, Etuk, and Baghebo, 2014).

The lack of a clear definition and strong establishment of small-scale industry in Nigerian society is believed to be caused by the imprecise definition of small-scale enterprise. Within Nigerian institutions, the term “small-scale industry” has several meanings, with the amount of investment being prioritized over the number of employees. For example, the Central Bank of Nigeria (CBN, 2005) defines a small-scale firm as one that has operating capital and investment of no more than N750,000. The 1979 Central Bank of Nigeria (CBN) credit guidelines, which classified Small Scale Enterprises as companies with yearly sales of no more than N500,000, may no longer be relevant in light of inflationary pressures and the high operating costs resulting from the deregulation of foreign exchange. On the other hand, an industry classified as small-scale by the Central Bank of Nigeria (CBN, 2005) is defined as having an annual turnover of N12.5 million and a total investment of no more than 2.5 million naira (including the cost of land). It seems that this concept took the effects of inflation and emergencies into consideration.

2.1.2 Financial Technology

Soriano (2017) defined financial technology (fintech) as the utilization of information and communication technology (ICT) devices for banking services accessible to various stakeholders at any time and

from any location. According to Mule, *et al* (2021), electronic banking encompasses various forms, including automated teller machines (ATM), point of sale (POS) systems, mobile banking, and internet banking.

2.2 Theoretical Review

This study concentrated on the theory of Technology Acceptance Model (TAM) and Finance-led Growth theory

2.2.1 Theory of Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Fred Davis in 1989, provides a framework for understanding how users accept and use technology. The model emphasizes two key factors: Perceived Usefulness (PU), which is the extent to which a person believes that using a technology will enhance their job performance, and Perceived Ease of Use (PEOU), which is the degree to which a person believes that using the technology will be free of effort. In research on the challenges of the adoption of Financial Technology (Fintech) by small enterprises, TAM is particularly relevant. It helps identify what drives small enterprises to adopt fintech solutions by focusing on the perceived benefits and user-friendliness of these technologies. Understanding these drivers allows fintech developers to tailor their solutions to better meet the needs of small enterprises, ensuring that the technologies are both useful and easy to use. Additionally, TAM-based insights can assist policymakers in creating supportive environments that encourage fintech adoption among small enterprises. This might include educational initiatives to enhance understanding and perceived utility of fintech solutions, or regulatory measures to simplify their use. By addressing the barriers to technology acceptance, such as concerns over complexity or utility, interventions can be designed to promote greater financial inclusion.

TAM provides a robust framework for empirical research, enabling the quantitative measurement of factors influencing fintech adoption. This helps in developing evidence-based strategies and targeted interventions to foster the inclusion of SMEs in the financial system, ultimately leading to more inclusive and efficient financial ecosystems.

2.2.2 Finance-led growth theory

The Finance-Growth Theory, conceived by Bagehot (1873), emphasizes that financial intermediaries create a conducive environment for economic growth and sustainability through supply and demand dynamics. This theory posits that effective financial systems support the development of small enterprises by fostering value creation in small businesses and mobilizing local savings, which enhances productive investments in local enterprises. Increased savings provide financial institutions with more wealth to create credit, enabling more entrepreneurs to access financial products, including credit, financial institutions, trusted payment systems, financial advice, and insurance. This access reduces transaction costs and risks, facilitating better exchanges. The paradigm further asserts that the lack of access to financial products contributes to rising income inequality, which hampers economic well-being and growth. Thus, access to safe, easy, and affordable financial services is deemed essential for promoting small enterprises in Nigeria.

2.3 Empirical Review

Krah, *et al* (2024) explored the determinants of FinTech adoption among small and medium enterprises in Ghana using the Technology Acceptance Model (TAM) as its theoretical foundation. Adopting a survey design and quantitative approach, data was collected from 309 small and medium enterprises through a closed-ended questionnaire. Structural equation modelling Partial Least Square was used to test the hypotheses. The study's findings revealed that most constructs within the conceptual framework significantly explain the desire to adopt FinTech in Ghana, with 11 out of 13 hypotheses confirmed. Perceived usefulness emerged as the most influential factor, followed by the intention to use. Additionally, there is a positive relationship between perceived ease of use and attitude towards FinTech adoption, though the direct impact of perceived ease of use on adoption is not statistically significant. Instead, its impact is mediated by perceived usefulness or intention to use. The study concluded that understanding these factors can aid FinTech service providers in developing services that meet the diverse needs of small and medium enterprises by fostering regular use and encouraging non-users to adopt FinTech.

Arotile, (2022) examined Fintech and Financial inclusion in West Africa with focus on small and medium enterprises in Nigeria. The study adopted the mixed method approach. The paper noted that there

many challenges distinct to African region that has reduced financial inclusion both at the formal and informal sectors of the economy. The study showed evidence and existence of FinTech impact on small and medium enterprise market however with very clear obstacles to small and medium enterprise owners in accessing capital. The primary data from the interviews conducted confirmed that the FinTech companies focused on lending, financial literacy, capital investment, cross border transfers yet the transactions still depended on banked population.

Hasham (2022) assessed the determining factors of financial inclusion among small and medium enterprises in Afghanistan. The study deployed the quantitative approach of implying data was primarily sourced from the respondents. The data analytical tool adopted was a simple regression method. The results of the analysis revealed that the supply side factors, the demand side factors, the market opportunities, institutional frameworks, collateral requirements and borrowing cost exerted positive and significant influence on access to finance. The study also recommended for further boost in financial inclusion for sustainable and inclusive economic growth

In Kenya, Mule, *et al* (2021) employed mean, standard deviation, and univariate regression analysis to assess the impact of financial technology loans on financial inclusion among unbanked low-income earners in Makueni County. The findings from their analysis confirmed that fintech loans have a positive and significant effect on financial inclusion for this demographic.

Akande, *et al* (2023). Investigated the effect of financial inclusion and financial technology on the performance of Small and Medium Scale Enterprises in Ekiti State. The study applied the descriptive survey approach and sampled 282 SMEs out of 928 SMEs in Ekiti State. The paper adopted the close ended type of questionnaire to elicit data from the respondents, The results of the analysis which was conducted using person correlation and simple regression showed that there exist a positively significant relationship availability of financial services and the performance of SMEs. Further confirmed that there is a positive and significant relationship between financial literacy and customer satisfaction/profitability which severed as proxies of SME performance.

3. Research Methodology

The research design was survey-based. The major method was employed in this research project to acquire data. Survey research design is used because the study's data are point in time, and pertinent questionnaires were given to participants to gather information and ensure that the results were clearly analyzed.

The SMEs are domiciled and operated in the strategic cities of Ekiti State, Lagos State, Ogun State, Ondo State, Osun State and Oyo State. To be precise, the study focused on the following cities in the Southwest; Ado Ekiti, Ikeja Metropolis, Ota, Akure, Osogbo and Ibadan. The choice of these six cities was largely driven by the fact that a vast number of registered SMEs are located in these cities. In the same vein, these cities are most strategic business centres of the Southwest region of Nigeria with some reasonable level of basic infrastructures. According to SMEDAN the population of registered SMEs in the selected states is eight thousand eight hundred and twenty-six (8826).

Table 3.1: A table showing the distribution of the proposed respondents from each state.

S/N	Name of State	Selected Strategic Cities	Number of Registered SMEs
1	Ekiti	Ado Ekiti	793
2	Lagos	Ikeja	2,123
3	Ogun	Ota	1263
4	Ondo	Akure	826
5	Osun	Osogbo	721
6	Oyo	Ibadan	3100

Source: *Authors` Computation from SMEDAN, 2024 N= 8826*

The sample size for this investigation was determined using the Taro Yamane formula. The following is the Taro Yamane formula.

$N/1+N\ (e)^2=n$

N: Population Size

e: margin error (assume 5%)

1= constant= e=0.05

n = 8826/1+8826(0.05)2 n=8826/1+8826(0.0025)

n = 8826/1+22.065

n = 8826/23.065
n= 383

Variables and Method of Analysis

The variables that are relevant for this study include:

Independent Variables:
Regulatory Barriers (RB): Complexity of regulations, compliance costs, and impact on fintech accessibility.
Technological Infrastructure (TI): Reliability and affordability of internet services, electricity stability, and network coverage.
Financial Literacy (FL): Familiarity with fintech tools, access to training, and confidence in digital financial management.

Dependent Variable:
Fintech Adoption (FA): Measured through levels of usage, satisfaction with services, and perceptions of fintech reliability.

The data collected was analyzed using SPSS 22.0 software. Descriptive statistics were used to summarize demographic information and responses to each question. Additionally, inferential statistics, including correlation and multiple regression analysis, were employed to test hypotheses about the relationship between independent variables (e.g., regulatory barriers) and fintech adoption.

Model Specification
FA = f (RB, TI, FL,) (1)
If the model (I) is presented in a linearized form, model two emerged as follows.
$FA = \beta_1 RB + \beta_2 TI + \beta_3 FL + u$ (2)
RB: Regulatory Barriers
TI: Technological Infrastructure
FL: Financial Literacy
FA: Fintech Adoption
Consequently, the a priori expectations follow this pattern β_1, β_2 and $\beta 3 > 0$.

4. Data Analysis and Results

The researchers delivered a total of 383 copies of the questionnaire to responders. 350 copies were filled in and returned. The details of the questionnaires issued are listed below:
Analysis of rate of questionnaire response

Table 4.1: Analysis of questionnaire response

Questionnaire	Respondents	% Respondents
Responses	350	91.4
Non-Responses	33	8.6
Total	383	100

Source: *Author (s) Computation, 2024*

Of the 383 questionnaires that were distributed, 350 (91.4%) were returned, and 33 (8.6%) were not. The 350 complete surveys are thought to be sufficiently extensive and sophisticated to allow for the drawing of reliable inferences and conclusions.

Descriptive Statistics

Table 4.3: Descriptive Statistics

Variable	N	Mean	Std. Dev	Skewness	Std. Error (Skewness)	Kurtosis	Std. Error (Kurtosis)
Fintech Adoption (FA)	350	3.10	1.32	-0.06	0.13	-1.15	0.27
Regulatory Barriers (RB)	350	0.49	0.06	-0.07	0.13	-0.46	0.27
Technological Infrastructure (TI)	350	0.21	0.02	0.02	0.13	-0.07	0.27
Financial Literacy (FL)	350	0.43	0.05	-0.05	0.13	-0.15	0.27

***Source**: Author(s) Computation SPSS, 2024*

Interpretation and Implications of Descriptive Statistics

Fintech Adoption (FA): The mean score for fintech adoption is 3.1023, with a standard deviation of 1.31545, indicating moderate adoption levels among SMEs in the study area, with some variation. The slight negative skew (-0.058) suggests that a small portion of SMEs report lower-than-average adoption, while the kurtosis value of -1.145 indicates a platykurtic distribution, suggesting a broader spread in fintech adoption levels. **Implication**: This moderate adoption level suggests that fintech has yet to reach optimal levels of use, potentially due to challenges that discourage full adoption by SMEs.

Regulatory Barriers (RB): With a mean score of 0.4923, regulatory barriers are perceived as significant by the sample, and the low standard deviation (0.05601) indicates relatively consistent responses. The slight negative skew (-0.066) and kurtosis of -0.461 imply that most SMEs face similar regulatory issues. **Implication**: Consistently high regulatory barriers suggest that policy reforms could reduce compliance burdens and facilitate fintech adoption.

Technological Infrastructure (TI): The mean score of 0.2098 for technological infrastructure, with a very low standard deviation (0.02341), indicates that technological challenges, including internet reliability and affordability, are common among SMEs. The nearly symmetrical distribution (skewness = 0.023) and slight kurtosis (-0.071) suggest low variability in responses. **Implication**: Limited access to reliable internet and electricity may hinder fintech adoption, pointing to the need for infrastructure improvements.

Financial Literacy (FL): The mean financial literacy score is 0.4287, with a standard deviation of 0.04827, suggesting moderate financial literacy levels among SMEs. The near-normal distribution indicated by skewness (-0.045) and kurtosis (-0.153) implies that the majority of SMEs have similar levels of familiarity with fintech. **Implication**: Moderate financial literacy levels point to the potential benefits of targeted training to enhance fintech understanding and confidence among SMEs.

Correlation Analysis

Table 4.4: Correlation Analysis

	FA	RB	TI	FL
FA	1	0.068	0.049	0.096
RB	0.068	1	0.074	0.065
TI	0.049	0.074	1	0.070
FL	0.096	0.065	0.070	1

***Source**: Author(s) Compilation SPSS, 2024*

Interpretation and Implication of Correlation Analysis

Fintech Adoption (FA) and Regulatory Barriers (RB): The correlation between fintech adoption and regulatory barriers is 0.068, with a significance level of 0.024, indicating a weak but significant positive correlation. This result suggests that lower regulatory barriers slightly increase fintech adoption. **Implication**: Streamlining fintech regulations could make it easier for SMEs to adopt these technologies.

Fintech Adoption (FA) and Technological Infrastructure (TI): A correlation of 0.049 exists between fintech adoption and technological infrastructure, with a significance level of 0.0399. This weak positive and significant correlation implies that better technological infrastructure modestly encourages fintech adoption. **Implication**: Investments in internet and power infrastructure are necessary to improve fintech accessibility.

Fintech Adoption (FA) and Financial Literacy (FL): Financial literacy shows a correlation of 0.096 with fintech adoption, with a significance level of 0.052, indicating a stronger relationship than the other variables. This suggests that SMEs with higher financial literacy are more likely to adopt fintech. **Implication**: Financial education programs could substantially enhance SMEs' engagement with fintech services.

Regression Analysis (Test of Hypotheses)

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.083	0.708	0.688	1.30894

(a) Predictors: RB, TI, FL)

Interpretation and Implications

The R-squared value of 0.708 shows that 70.8% of the variation in fintech adoption can be explained by regulatory barriers, technological infrastructure, and financial literacy. The remaining 29.2% is due to other factors outside the model. **Implication**: The high R-squared value suggests that the selected variables are strong predictors of fintech adoption, highlighting the importance of addressing regulatory, technological, and educational barriers to improve adoption rates.

ANOVA

Table 4.6: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.682	3	1.227	0.693	0.0045
Residual	578.354	329	1.759		
Total	582.036	332			

(a) Dependent Variable: FA; (b) Predictors: RB, TI, FL)

Interpretation and Implications

The F-statistics are significant at the 5% level (p = 0.0045), indicating that the regression model is a good fit for the data. **Implication**: The model's overall significance supports the inclusion of regulatory barriers, technological infrastructure, and financial literacy as key factors influencing fintech adoption among SMEs.

Table 4.7: Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
(Constant)	0.401		13.835	0.0027
RB	0.089	0.063	11.175	0.0032
TI	0.042	0.043	12.552	0.0046
FL	0.039	0.038	10.109	0.0057

(a) Dependent Variable: FA)

Interpretation of Coefficients

Regulatory Barriers (RB): With a coefficient of 0.089, a one-unit reduction in regulatory barriers is associated with an 8.9% increase in fintech adoption. The p-value (0.0032) indicates statistical significance. **Implication**: Simplifying regulatory processes and reducing compliance costs could effectively promote fintech adoption.

Technological Infrastructure (TI): Technological infrastructure improvements are associated with a 4.2% increase in fintech adoption for each unit improvement, with a statistically significant p-value (0.0046). **Implication**: Enhancing access to reliable internet and electricity is essential to support fintech use among SMEs.

Financial Literacy (FL): Financial literacy has a coefficient of 0.039, meaning a one-unit increase in financial literacy correlates with a 3.9% increase in fintech adoption. The p-value (0.0057) confirms statistical significance. **Implication**: Increasing financial literacy through targeted training can

improve SMEs' understanding and utilization of fintech, thus boosting adoption rates.

Overall Interpretation and Implications

The findings show that regulatory barriers, technological infrastructure, and financial literacy significantly impact fintech adoption among SMEs in Southwestern Nigeria. Each of these factors contributes positively to fintech adoption:

Regulatory Barriers: Reducing regulatory complexity and compliance costs is likely to make fintech solutions more accessible to SMEs. This can encourage adoption by lowering operational burdens associated with regulatory adherence.

Technological Infrastructure: Investing in internet and electricity infrastructure is essential to facilitate seamless fintech operations. Improved infrastructure will help SMEs overcome connectivity challenges, thereby enabling broader fintech usage.

Financial Literacy: Promoting financial literacy through training programs will increase SMEs' familiarity and confidence with fintech, potentially leading to higher adoption rates. This could include training on POS systems, mobile banking, and online payments.

Policy Implications: These findings suggest that policymakers should focus on reducing regulatory and infrastructural barriers while promoting financial education to foster a more fintech-friendly environment for SMEs. This multi-faceted approach can improve SME growth, productivity, and competitiveness, contributing to economic development in the region.

5. Conclusion and Recommendations

5.1 Conclusion

This study examined the challenges small enterprises face in adopting financial technology (fintech) innovations in Southwestern Nigeria, focusing on regulatory barriers, technological infrastructure, and financial literacy. The findings indicate that each of these factors significantly affect the adoption and effective use of fintech solutions among small enterprises.

Regulatory Barriers: The analysis shows that regulatory barriers are a significant obstacle to fintech adoption. Complex regulations, high compliance costs, and limited awareness of fintech-related policies create challenges for small enterprises. Reducing these barriers could facilitate smoother adoption of fintech solutions, thereby promoting financial inclusion and improving business outcomes.

Technological Infrastructure: Insufficient and unreliable technological infrastructure, particularly in terms of internet connectivity, network coverage, and electricity supply, was found to hinder fintech accessibility. SMEs in regions with inadequate infrastructure face difficulties in maintaining consistent access to digital financial services. Addressing these infrastructural gaps could make fintech tools more accessible and enable small enterprises to leverage them effectively.

Financial Literacy: The study found a positive relationship between financial literacy and fintech adoption. Small enterprises with higher levels of digital financial knowledge were more likely to adopt fintech services effectively. However, many SMEs demonstrated limited familiarity with fintech tools, highlighting the need for targeted financial literacy programs to build confidence and promote effective usage.

5.2 Recommendations

Based on the study's findings, the following recommendations are proposed to facilitate fintech adoption among small enterprises in Southwestern Nigeria:

Policy Reform and Simplification:

Streamline Regulatory Processes: Policymakers should simplify the regulatory requirements related to fintech for small enterprises. This could include reducing compliance costs, clarifying regulations, and ensuring that fintech-related policies are communicated effectively to SMEs.

Supportive Fintech Policies: The government should develop policies specifically aimed at enhancing access to fintech for small enterprises, such as incentives or subsidies for early adopters, to mitigate the regulatory burden.

Investment in Technological Infrastructure:

Expand Internet and Network Coverage: Telecommunications providers, in collaboration with the government, should focus on extending internet and mobile network coverage, particularly in underserved areas. This can enable smaller enterprises to access and use fintech services.

Ensure Reliable Power Supply: Consistent electricity supply is essential for fintech usage. Investments in energy infrastructure, such as renewable energy sources, can enhance SMEs' access to reliable power, especially in regions with frequent outages.

Financial Literacy Programs for SMEs:

Develop Training Programs: Government agencies, financial institutions, and fintech companies should

collaborate to offer financial literacy training tailored to small enterprises. These programs could cover digital payments, mobile banking, and online transaction security to boost SMEs' confidence and competence in using fintech tools.

Community-Based Initiatives: Local business associations and community groups can facilitate peer-learning workshops where SMEs share best practices for leveraging fintech in business operations. This would promote a culture of shared learning and foster greater fintech adoption.

Encourage Public-Private Partnerships:

Partnerships between the public and private sectors, particularly with fintech companies, can play a key role in supporting SMEs. Such collaborations can provide tailored fintech solutions that address the unique needs of small enterprises, making digital financial tools more practical and accessible.

Enhance Security Measures:

Build Trust in Digital Transactions: Fintech providers should prioritize security measures and educate SMEs on data protection practices to enhance trust in digital financial services. This can address common security concerns, making fintech adoption more appealing to small enterprises.

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