Financial Technology (Fintech) Adoption and Operational Efficiency of Entrepreneurial Ventures in Oyo State, Nigeria

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Abstract

This paper examined the influence of financial technology (FinTech) adoption on operational efficiency of entrepreneurial ventures in Ibadan metropolis, Oyo State, Nigeria. The three main dimensions of FinTech (i.e., mobile banking technology, digital payment systems, and online lending platforms) and their impact on operational efficiency indicators were specifically studied. A quantitative research design was chosen and multiple linear regression was used to analyse data in order to examine the relationship between FinTech adoption and operational efficiency. The results showed that FinTech has a significant impact on the efficiency of the operations of the entrepreneurial ventures. The regression model was statistically significant ($F = 31.352$, $p < 0.001$) and had an average level of explanatory power with an $R^2$of 0.240 (Adjusted $R^{-2} = 0.232$), implying that FinTech variables accounted 24.0% of the change in operational efficiency. The research concluded that the adoption of FinTech is an important contributor to operational efficiency, although its impacts vary across digital financial instruments. The study recommended better digital infrastructure, greater entrepreneurial digital literacy, and better regulatory frameworks to realise the full potential of FinTech among SMEs in Nigeria.

Keywords: Financial Technology (fintech), Operational Efficiency, Entrepreneurial Ventures, Mobile Payment Technology.

1. Introduction

The blistering integration of finance and digital technology, often known as Financial Technology (FinTech), continues to transform the financial services industry globally, breaking the timeworn patterns of the financial system and creating new opportunities for entrepreneurial development. FinTech encompasses a variety of digital solutions, including mobile banking, blockchain,

peer-to-peer lending, digital payment platforms, automated accounting software, and data-driven credit scoring (Al Abbadi, 2025). These innovations have completely changed the manner in which financial services are generated, transported, and consumed, mainly by reducing transaction frictions, lowering the cost of delivering services, and improving financial access for individuals and firms (Nutalapati, 2024). With the broadening of the digital transformation agenda across global economies, FinTech has become an inevitable factor in inclusive economic development and entrepreneurial competitiveness.

Entrepreneurial businesses, particularly micro, small, and medium-sized enterprises (MSMEs) are involved in operating in conditions of limited access to finance, high transaction costs, poor record-keeping, as well as limited market penetration (Elmahdy et al., 2025). The system of traditional financial institutions may be based on collateral-based lending schemes and heavy documentation requirements which can leave formal credit out of reach to many small-scale and young entrepreneurs. These innovations in FinTech provide alternative avenues by using digital footprints, transaction records, mobile data, and algorithmic risk assessments to determine creditworthiness, thereby further increasing access to working capital and growth financing (Barney et al., 2025).

Mobile money and digital payment solutions have redefined how entrepreneurs participate in financial activities in Sub-Saharan Africa (Madi *et al*., 2025; Barney *et al.,* 2025; Oni, 2025). A number of countries like Kenya, Ghana and Nigeria have recorded a fast uptake of platforms that are easy to use in making payments, in improving liquidity, transparency as well as managing cash-flow effectively. Nigeria in particular has seen the development of new platforms such as Paystack, Opay, Kuda and Flutterwave, which have become significant facilitators of digital commerce, allowing micro-entrepreneurs to get paid in real time, automate transactions, and decrease the risks of cash-based transactions (Ayayi *et al*., 2025).

In addition to the better availability of finance, FinTech tools are gaining a role in internal operation procedures in entrepreneurial activities. Digital bookkeeping, cloud accounting systems, electronic invoicing, and automated payroll solutions offer real-time information, reduce human error, lower operational costs, and enhance overall efficiency (Barney *et al*., 2025). With the increasing competitive pressure on the entrepreneurial world, the capacity to use technology to create efficiency in operations has become a key factor in survival, strength and sustainability of business (Nutalapati, 2024).

Although much attention has been given to FinTech worldwide, there remains considerable uncertainty about its actual effects on small businesses in emerging economies. Most research papers have noted the transformative potential of FinTech; however, empirical findings, especially in Africa, show persistent disparities between FinTech provision and successful FinTech applications. Issues such as unreliable digital infrastructure, high transaction fees, poor digital literacy, cybersecurity threats, and ambiguous policies remain problems for entrepreneurs in contexts such as Nigeria (Barney *et al*., 2025). These limitations make it difficult to leverage FinTech solutions by businesses to the fullest extent. The anecdotal evidence in Oyo State, where entrepreneurial ventures make up a significant portion of the economic activity, shows that a large number of small businesses still depends on cash transactions and manual business operations despite the increasing use of digital solutions. This paradox creates a relevant question: Does the adoption of FinTech truly lead to the efficiency of operations of entrepreneurial activities in this regard? This ambiguity is a good impetus for the current research. The majority of the existing studies have considered FinTech in terms of financial inclusion, technological disruption, or consumer adoption (Madi *et al*., 2025).

Few empirical research exists on the impact of particular FinTech tools on quantifiable operational results (e.g., faster, cheaper, more revenue) particularly among micro and small enterprises in Nigeria. The operational efficiency aspect has been thoroughly under researched with its policy blind spots and the little knowledge on how to streamline FinTech to achieve entrepreneurial performance. Consequently, the key issue that this study will focus on is the lack of empirical data concerning the interaction between the adoption of FinTech and operational efficiency of entrepreneurial ventures in Oyo State. Despite the fact that FinTech has guaranteed better speed, less cost of operation and more revenue generation, it is yet to be seen whether entrepreneurs in this economic environment are enjoying these benefits. This study aims to fill this gap by empirically investigating the impact of key FinTech applications, namely mobile banking, online payment systems, and online lending platforms, on the effectiveness of entrepreneurial enterprises in Oyo State. The research hypotheses are;

H_{01}: Mobile banking technology has no significant effect on the operational efficiency of entrepreneurial ventures in Oyo State.

H_{02}: Digital payment systems have no significant impact on operational efficiency of entrepreneurial ventures in Oyo State.

H_{03}: Online lending platforms have no significant relationship with the operational efficiency of entrepreneurial ventures in Oyo State.

The rest of this paper is structured as follows: Section 2 provides a literature review; Section 3 details the methodology; Section 4 presents the results and discusses the findings; and Section 5 offers policy implications and recommendations

2. Literature Review

2.1 Conceptual Review

Financial Technology (FinTech)

Financial Technology (FinTech) is the combination of digital technologies with financial services to make them more efficient, accessible, and to deliver services. It includes mobile banking, digital payments, online lending, blockchain, and automated financial management tools innovations (Bakri *et al.,* 2024). FinTech uses the power of artificial intelligence, big data, and cloud computing to offer cost-effective and user-friendly solutions to finance (Nutalapati, 2024). In addition to enhancing customer experience, it fosters financial inclusion by reducing entry barriers and allowing underserved populations, and especially entrepreneurial activities, access to financial services (Agalya *et al.,* 2026). FinTech is particularly instrumental in the developing world, such as Nigeria, to bridge infrastructural gaps, improve decision making with real time analytics, and advance business development by lowering the costs of operations and accessing capital more easily (Oni, 2025). In the context of this study, FinTech denotes online financial products that SMEs in Nigeria use to make payments, transact business, and communicate with their consumers. It particularly absorbs the innovations like mobile money, POS systems, online payment gateways and alternative digital payment solutions that help in achieving operational efficiency, lessening transaction costs, and eventually, customer retention and long term business performance.

Mobile Banking

Mobile banking is the utilization of mobile devices (smartphones, tablets, etc.) to carry out financial operations, operate accounts, and a broad variety of other

banking services remotely. It also allows entrepreneurs to carry out functions like transfer of funds, payment of bills, balance checking, and mobile money transactions without necessarily having to go to the physical bank branches (Bankar et al., 2025). Mobile banking improves business effectiveness and enables entrepreneurs to engage in productive business activities that can help in generating revenues by reducing transaction time, eliminating queuing delays, and reducing operational costs compared to the traditional banking systems (Ojeh *et al.*, 2025).

Mobile banking also enhances sales levels and stability of cash flows by providing the transaction confirmation in real time to minimise the risks of delay in payments, bad debt or fraud (Ojeh *et al*., 2025). The application of mobile money in Sub-Saharan Africa has been found to significantly boost the income levels, enhance their financial resilience, and help small enterprises to grow (Ayayi *et al*., 2025). Moreover, mobile banking facilitates transparent financial management, proper tracking of transactions and improved customer satisfaction, which leads to more patronage and long-term business expansion (Olopade *et al.,* 2025). Its capacity to offer convenient savings, microcredit and insurance services further enhance the capacity to operate and enhance financial sustainability.

Mobile banking in the framework of this paper is the FinTech platform where SMEs in Ibadan Metropolis execute transactions, customer payments, and financial transactions with customers. It encapsulates the online processes that facilitate client retention by providing faster payment services, enhanced convenience of service, enhanced control of financial records, and increased trust of business transactions. Mobile banking is therefore an important digital aid, which determines customer behaviour, loyalty and long-term patronage in the SME sector.

Digital Payment Systems

Digital payment systems are electronic systems like POS terminal, mobile money applications, and online payment gateway, which enable efficient, safe, and cashless financial transactions. These systems will minimize the use of physical cash and allow business to make payments in a fast and more accurate manner. Digital payment systems increase the business's overall profitability by reducing transaction costs and revenue leakage and enhancing operational efficiency (Madi *et al*., 2025). They also offer greater convenience and flexibility to customers,

leading to increased sales volume and enhancing customer satisfaction and retention (Barney *et al*., 2025).

In Nigeria, digital payments have been expanding at a high rate, fueled by the increase of POS and mobile payments and by the efforts of Central Banks, which has significantly improved the number of transactions and the earnings of SMEs (CBN, 2024; Oni, 2025). Electronic receipts and transaction logs are such automated features of digital payment systems that improve financial transparency and allow managers to better make decisions (Ojeh *et al*., 2025). These will assist in increasing financial discipline, tracking of cash flows and profit margins. Altogether, digital payment systems are crucial to modernizing the business, enhancing customer experience, and maintaining a competitive edge in a more and more digital economy.

Digital payment systems are one of the important FinTech elements, in the current context of this research that SMEs in Ibadan Metropolis use to accept customer payments, handle sales and gain customer confidence. Customer satisfaction, repeat business and retention are directly affected by their capability to offer quick, safe, and convenient payment methods. Digital payment systems are at the heart of dictating the efficacy with which SMEs maintain customers within the competitive business landscape by minimizing transaction delays, risks associated with cash handling, and facilitating smooth payment experiences.

Online Lending Platforms

Online lending solutions allow entrepreneurs to access credit quickly, flexibly, and technology-oriented and most of the barriers associated with the traditional banking systems are overridden. Using alternative data sources, like mobile transaction histories, online records of digital payments, and social data, these platforms make real-time credit determinations, which helps them to process loans faster and disbursements (Bakri *et al.,* 2024). This speed and flexibility come in particularly handy when it comes to the cash flow management side as access to capital on time enables SMEs to meet operating expenses, resolve liquidity shortages and take any opportunities in the market (Bakri *et al*., 2024). Online lending contributes greatly to financial inclusion to micro, small, and medium-sized enterprises (MSMEs), which usually experience credit constraints (collateral or time-consuming bank processes) (Bankar *et al.* 2025). Empirical research demonstrates that the availability of FinTech-enabled credit enhances liquidity, continuation of operations, and business viability, particularly in times

of economic uncertainty or changes in customer demand (Ojeh *et al*., 2025). Therefore, online lending platforms are of paramount importance in enhancing cash-flow management and resilience of the entrepreneur in the dynamic business context.

Online lending platforms are an important FinTech instrument in this study, as they assist SMEs in the city of Ibadan Metropolis to access the necessary, timely, and technology-based financing solutions. Access to working capital can be reliable which enables SMEs to keep their products on stock, invest in better customer service, and keep operations going when demand is high or when they face financial pressure. All these financing benefits have a positive impact on customer retention since a business with a sound cash flow can easily fulfill customer expectations, prevent stockouts, and maintain a high quality of services. Thus, this study analyzes online lending platforms as a major factor in financial stability and retention of customers among SMEs.

Operational Efficiency

Operational efficiency is the capacity of the firm to use its financial, human, and technological resources to attain optimal performance in the form of profitability, liquidity, stability, and business growth (Ayayi *et al.,* 2025). In the case of entrepreneurial ventures, operational efficiency would include sound cost management, prompt revenue collection, efficient cost management, and consistent cash flow. Companies with high financial performance are normally characterized by increased investor confidence, creditworthiness and accessibility to external funds, which facilitate business growth and the strategic growth in the long run (Olopade *et al*., 2025).

Contrastingly, poor financial management has been a significant cause of business failure in most developing economies where SMEs are usually characterized by poor bookkeeping, cash-flow misalignment and inadequate access to financial expertise (Elmahdy *et al*., 2025). This has been hugely changed by the emergence of financial technology (FinTech). FinTech tools allow to automate the routine financial operations, decrease the human errors and manage the financial transactions digitally and provide the real-time financial analytics that can be used to improve operational decision-making (Elmahdy *et al*., 2025). Such digital capabilities can assist companies to enhance resource distribution, boost productivity, and align financial results with the overall business objectives, contributing to long-term sustainability and competitive edge.

Operational efficiency in the context of this research is the extent to which SMEs in Ibadan Metropolis use FinTech solutions, including mobile banking, digital payment systems, and online lending platforms, to optimize financial operations, manage expenses, and ensure a stable cash flow. Embracing these technologies will enable SMEs to increase transaction speed, reduce losses from human error, strengthen internal controls, and streamline day-to-day business processes. The resultant better operational efficiency translates to better customer satisfaction, consistency in the service and retention rates, which are the main concern in the performance of a small and medium business in a competitive city economy.

2.2 Theoretical Framework

Technology Acceptance Model (TAM) is a popular theoretical framework which has been developed by Davis (1989) to describe and predict acceptance and use of new technologies by the user. According to the model, the perceived usefulness (PU) and perceived ease of use (PEOU) are two beliefs that largely influence an individual to adopt and use a technology. Perceived usefulness is the extent to which the individual considers that application of a specific technology will improve job performance whereas perceived ease of use is the extent to which the individual regards that the application of the technology will be free of effort (Davis, 1989). The above two beliefs will affect the attitude of the user about the technology which will affect his or her behavioural intention to use the technology and at the end his or her actual usage behaviour.

TAM has found extensive usage in research on digital technologies, especially in financial technology (FinTech), mobile banking, and electronic payment systems. It is believed that the model is very applicable in explaining the adoption of digital financial innovations by individuals and businesses since it captures the functional and usability considerations that make people adopt innovations (Venkatesh & Davis, 2000). When it comes to SMEs, TAM assists in understanding how entrepreneurs assess FinTech tools (and services) like mobile banking, digital payment systems, and online lending platforms in terms of their perceived capacity to enhance efficiency, cut transaction costs, and business performance.

Applying to the framework of the current research, TAM offers the theoretical basis to the interpretation of adoption and utilization of FinTech services among Ibadan Metropolis SMEs. More entrepreneurs will consider using mobile banking, digital payment systems and online lending platforms when they view

them as effective in enhancing efficiency in their operations, faster transactions, increased customer satisfaction as well as business growth. Equally, the usability of the technologies determines the level of adoption of the technologies in the day-to-day financial activities of SMEs. Thus, TAM would be suitable to describe the relationship between FinTech adoption behaviour and enhanced operational efficiency and customer retention among SMEs.

2.3 Empirical Review

Al Abbadi (2025) looked at the influence of financial technology (FinTech) on the performance of commercial banks. The research found out how the use of FinTech influences the performance of the Jordanian commercial banks in 2012-2022 by applying a text-mining technique to identify the keywords in the text by five categories to form a FinTech index of commercial banks. Using multiple regression model to examine data on a sample comprising of three conventional banks and three Islamic banks, the study results revealed that there is a positive relationship between FinTech and performance of commercial and Islamic banks in Jordan, Secondly, among the control variables, both the Return on Assets and capital adequacy ratio have a positive impact on the Return on Shareholders' equity. On the macroeconomic level, when the money supply increases, it has a positive effect on the performance of banks, i.e. the more the money supply increases, the more banks are likely to embrace financial technology. Thirdly, there are performance differences between the Islamic and conventional banks in Jordan throughout the study period and the impact of FinTech on the performance of Islamic banks is stronger compared to conventional ones. Nevertheless, it is limited by a very small sample size, which makes it less generalisable and a single country banking system, which might not be sufficiently representative of wider FinTech dynamics in emerging economies.

Elmahdy *et al.* (2025) investigated the effect of Fintech lending on the survival and sales revenue of micro-enterprises in Nigeria. The research design used was survey design whereby a structured questionnaire was administered to 303 micro-enterprise owners/managers in Lagos, Nigeria. The demographic data were analyzed using charts and the hypothesis tested with SPSS through regression analysis. The results have shown that Fintech lending has significant impacts on the survival and sales revenue of micro-enterprises. The R-square means that Fintech lending is a predictor of the survival of micro-enterprises by 24.9%. Moreover, the results of the test of the second hypothesis show that Fintech lending explains a 30.8% change in the sales revenue of micro-enterprises. The

study discovered that Fintech lending can largely affect the survival and sales revenue of micro-enterprises. The study is however a geographical study limited to Lagos State and may not be representative of other regions in Nigeria, not to mention that it only used self-reported questionnaire data and hence, subject to response bias.

Madi *et al*. (2025) analyzed the correlations between the environmental factors and the use of financial and regulatory technologies to improve operation in the SMEs. To address the research questions and to test the hypotheses, the researchers combined a descriptive-analytical research design with a research method which was based on a questionnaire. The result shows a statistically significant evidence of the financial and regulatory technologies and the improvement in the optimal performance of SMEs (0.05). In addition, as far as the areas of improvement are concerned, the research has suggested that SMEs should enhance the use of artificial intelligence and information technology, particularly in financial and regulatory sphere since its role in improving the performance of operations cannot be overestimated. However, the sample size is quite limited and the geographical area was narrow that decreases the external validity of the results and cross-sectional nature of the study precludes causal inferences.

Maimako *et al.* (2025) examined dimensions of FinTech (Technological Innovation, Payment and Settlement Systems, Access to Financial Information, Risk Control Mechanisms and Lending and Financing Platforms) relate to the performance of women entrepreneurs in Kano Metropolis, Nigeria. The sampling method was multi-stage and the researchers selected a sample of 371 women entrepreneurs, a cross-sectional survey design was used. A structured questionnaire was used to collect data and Multiple Linear Regression was used to test the hypotheses. The results showed the significant model (F-statistic = 58.34, $p < .001$) that explained the 50.7 percentage of the variance in the business performance. The five dimensions of FinTech had a strong positive influence, although with different effects. Lending and Financing Platforms ($\beta = .315$, $p < .001$) exerted the strongest effect, followed by Payment and Settlement Systems ($\beta = .257$, $p < .001$), Technological Innovation ($\beta = .216$, $p < .001$), Risk Control Mechanisms ($\beta = .171$, $p = .001$), and Access to Financial Information ($\beta = .118$, $p = .021$). Critical access-impact gap was identified with the adoption rate of the most powerful performance driver (lending) being the lowest. The paper has found that there is a hierarchical relationship between the FinTech dimensions with the most important driver of growth being capital access. However, the study

is restricted to only women entrepreneurs, thus, it is hard to extrapolate the findings on the general SME population, and it is not representative of the long-term effects of FinTech embracing of time.

Dottie and Moruku (2025) examine the effect of financial technology on small and medium enterprises in Delta State. The study used a descriptive research design method. Stratified random sampling was used and a sample size of 105 SMEs reached. The research employed primary data that was collected using a self-administered questionnaire. The result of regression determined that there was a positive significance effect of financial technology on the growth of small and medium enterprises. The research attributed the growth of small and medium enterprises to 16 percent of mobile money and digital loans banking. The study suggested that the financial institutions should capitalize on the rising popularity of mobile and online services to establish alliances with mobile phone service providers and offer flexible financial services to operators. The study however only contributes a relatively small percentage to SME growth and this implies that other unexplored factors might be of more significant contribution and the small sample used is a limitation to its extended use.

3. Methodology

This study adopted a descriptive cross-sectional survey design to examine the relationship between financial technology (FinTech) adoption and the operational efficiency of entrepreneurial firms in Ibadan, Oyo State, Nigeria. It was deemed suitable because it enables the systematisation of data collection and the quantitative analysis of information on respondents at a single point in time, thereby enabling the evaluation of relationships between variables. The researchers concentrated on micro, small, and medium enterprises (MSMEs) actively using FinTech tools, including mobile banking, online lending platform, and digital payment systems. Ibadan was chosen because the city is a key commercial center, where entrepreneurial activities are highly concentrated and where digital financial services are becoming more widespread. The population of the study comprised MSME owners and operators who use FinTech services; however, due to the absence of a comprehensive database of such users, the population was considered indefinite.

The study targeted entrepreneurs operating small and medium-sized enterprises (SMEs) that have adopted financial technology (FinTech) services. Since there was no comprehensive sampling frame identifying the total number of FinTech

users, the population was regarded as unknown (infinite). Consequently, the sample size was determined using Cochran's (1977) formula for an unknown population which was approximated to 384 respondents. Thus, 384 represents the sample size and not the population. A purposive sampling technique was employed to select only entrepreneurs with practical experience in the use of FinTech services. Data were collected using a structured questionnaire comprising two sections: Section A elicited respondents' demographic characteristics, while Section B measured the study variables which are mobile banking, digital payment systems, online lending platforms, and operational efficiency (revenue growth, profitability, and cash flow management) using a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1). The instrument was subjected to face and content validity through expert review by specialists in entrepreneurship and research methodology. Thereafter, a pilot study involving 30 entrepreneurs outside the study sample was conducted to assess the reliability of the questionnaire using Cronbach's alpha. The results showed reliability coefficients of 0.821 for mobile banking, 0.844 for digital payment systems, 0.796 for online lending platforms, and 0.871 for operational efficiency, with an overall Cronbach's alpha of 0.842. Since all the coefficients exceeded the recommended minimum threshold of 0.70, the instrument was considered reliable and suitable for the main study. The collected data were coded and analysed using the Statistical Package for the Social Sciences (SPSS) Version 20. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise respondents' characteristics and responses, while multiple linear regression analysis was employed to examine the effect of FinTech adoption on the operational efficiency of entrepreneurial ventures. All hypotheses were tested at a 5% level of significance, with the decision rule that the null hypothesis would be rejected where the p-value was less than or equal to 0.05 and retained where the p-value exceeded 0.05.

4. Results and Discussions

This section provided and discusses the empirical results of the research on the impact of financial technology (FinTech) on the efficiency of the entrepreneurial ventures operation in the Ibadan metropolis of Oyo State. The findings have been determined through the multiple linear regression analysis which was applied to test the examine that existed between mobile banking technology, digital payment systems, online lending sites and efficiency of operation. Relevant empirical literature is also discussed to provide deeper insight into the results and their implications for the performance of the entrepreneur.

4.1 Analysis of the Responses from the Questionnaire Table 1: Demographic Characteristics of Respondents

Demographic Variable	Categories	Frequency (N)	Percentage (%)
Gender	Male	185	61.3
	Female	117	38.7
Age	18–24	60	19.9
	25–34	140	46.4
	35–44	60	19.9
	45–54	30	9.9
	55+	12	4.0
Highest Education	O'Level	10	3.3
	SSCE/WAEC/NECO	40	13.2
	OND/NCE	50	16.6
	HND/B.Sc.	120	39.7
	M.Sc./Professional	82	27.2
Nature of Business	Retail/Trading	130	43.0
	Services	90	29.8
	Manufacturing/Production	30	9.9
	Agriculture/Agribusiness	25	8.3
	ICT/Tech services	27	8.9
Years in Business	<1 year	40	13.2
	1–3 years	120	39.7
	4–7 years	80	26.5
	8–15 years	40	13.2
	15+ years	22	7.3
Number of Employees	Owner only	60	19.9
	1–4 employees	150	49.7
	5–9 employees	50	16.6
	10–19 employees	30	9.9
	20+ employees	12	4.0
	Total	**302**	**100.0**

Source: Field Survey (2026).

Table 1 shows demographic factors of the respondents in the study. The results show that male respondents constitute the majority with 61.3%, while females account for 38.7%, indicating a male-dominated entrepreneurial population in the study area. Regarding age distribution, the majority of respondents are between 25 and 34 years (46.4%), then 18 to 24 years and 35 to 44 years (19.9% each), indicating that the use of FinTech is predominantly among young and economically active entrepreneurs. The educational background of the respondents demonstrates a comparatively good level of formal education with 39.7% having HND/B.Sc. qualifications and 27.2% having postgraduate degrees which means that the majority of the entrepreneurs are literate enough to embrace FinTech solutions. Regarding business features, retail/trading is the most prevalent (43.0%), then there are services (29.8%), and the majority of businesses are still in their first years of operation (39.7%). Therefore, the demographic profile implies that the respondents are mostly young, well-educated, small-scale entrepreneurs whose primary activity is trading and service, which creates an appropriate background to study FinTech adoption and efficiency of its operation.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490[a]	.240	.232	.887

4.2 Test of Hypotheses

Table 2: Model Summary

a. Predictors: (Constant), Online Lending Platforms, Mobile Banking Technology, Digital Payment Systems

The table 2 is the model summary of the regression analysis of the effect of the FinTech components on the dependent variable. The correlation coefficient (R) of the result is 0.490, which implies that there is a moderate positive correlation between the independent variables (mobile banking technology, digital payment systems, and online lending platforms) and the dependent variable. The R- square of 0.240 means that the model explains 24.0 percent of the variation in the dependent variable, with the other 76.0 percent being explained by other variables that are not included in the study. The adjusted R-Sq of 0.232 further validates the

predictive capacity of the model on the number of predictors having been adjusted, which indicates a stable yet moderate fit. The standard error of the estimate (0.887) indicates a relatively low level of dispersion between the observed and predicted values, implying that the model provides a reasonable level of accuracy in explaining the relationship between FinTech adoption and the outcome variable.

Table 3: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	73.965	3	24.655	31.352	.000[b]
	Residual	234.343	298	.786		
	Total	308.308	301			

a. Dependent Variable: Operational Efficiency

b. Predictors: (Constant), Online Lending Platforms, Mobile Banking Technology, Digital Payment Systems

Table 3 presents the ANOVA results that were used to test the overall significance of the regression model to assess the effect of FinTech components on the operational efficiency. The results indicate that the regression model is statistically significant with an F-value of 31.352 and a p-value of 0.000($p < 0.05$). This shows that a combination of mobile banking technology, digital payment systems, and online lending platforms greatly forecast differences in operational efficiency across entrepreneurial ventures. The sum of squares of the regression (73.965) even versus the residual sum of squares (234.343) indicates that a significant percentage of the variation in the operational efficiency is captured by the model. Thus, the outcome validates that the general model fits well and that the use of FinTech has a statistically significant impact on operational efficiency in the region of the study.

Table 4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.500	.275		9.106	.000
	Mobile Banking Technology	-.114	.051	-.118	-2.255	.025
	Digital Payment Systems	.210	.061	.217	3.431	.001
	Online Lending Platforms	.315	.058	.347	5.425	.000

a. Dependent Variable: Operational Efficiency

Table 4 presents the regression coefficients, showing the individual effects of FinTech components on operational efficiency. The results reveal that mobile banking technology has a negative but statistically significant effect on operational efficiency ($\beta = -0.118$, $t = -2.255$, $p = 0.025$), indicating that, contrary to expectation, increased reliance on mobile banking is associated with a slight reduction in operational efficiency among the sampled entrepreneurs. In contrast, digital payment systems show a positive and significant effect ($\beta = 0.217$, $t = 3.431$, $p = 0.001$), suggesting that increased use of POS terminals and online payment gateways enhances operational efficiency. Similarly, online lending platforms exhibit the strongest positive influence on operational efficiency ($\beta = 0.347$, $t = 5.425$, $p = 0.000$), implying that access to digital credit significantly improves business operations, liquidity management, and overall efficiency.

The value of the constant term (2.500) is also significant meaning that there is the base level of operational efficiency where all the predictors are kept constant. On the whole, the findings indicate that not every element of FinTech has the same directional impact, but digital payment systems and online lending platforms have a strong positive effect on the operation efficiency, and mobile banking has a low negative effect. This implies that various FinTech tools have different effects on business performance outcomes within the study area.

4.3 Discussion of Findings

As the results of the current research indicate, financial technology (FinTech) has a strong impact on the efficiency of entrepreneurial activity, but the effects of various FinTech elements on it differ. Regression analysis revealed that mobile banking technology has a negative, but statistically significant impact on operational efficiency, and digital payment systems and online lending platforms have positive and significant impacts. Hence, the model was statistically significant and accounted a significant percentage of the variation in the operational efficiency and this validates that FinTech adoption plays a significant role in determining the performance outcomes of the SMEs in Ibadan, Oyo State.

The above positive impact of the digital payment systems is consistent with the perception that cashless payment systems can increase the speed of the transactions, minimize leakage, and financial control, which can boost the performance of the operations. This is in line with the results of Elmahdy *et al*.

(2025), who concluded that FinTech lending has a positive effect on sales revenue and survival of SMEs in Nigeria, and Maimako et al. (2025), who revealed that payment and settlement systems positively affect the performance of businesses in women entrepreneurs, but with different degrees of the dimensions of FinTech. Likewise, Dottie and Moruku (2025) have identify that mobile money and digital lending have a substantial positive impact on SMEs development, which supports the evidence that the use of FinTech has a positive effect on the development of enterprises. The high positive influence of online lending platforms in this research also supports the findings of Elmahdy *et al*. (2025) and Maimako *et al*. (2025), who found that access to digital credit is one of the strongest determinants of SME performance because of increased liquidity, access to capital, and business survival.

However, the negative effect of mobile banking technology on the efficiency of operations is a rather unexpected twist and shows that not all FinTech solutions have the automatic potential to lead to improved performance. This may be owed to factors such as network instability, transaction delays, service fee or digital illiteracy among entrepreneurs that may reduce the gains of efficiency. This finding partially contradicts the positive relation as presented by Al Abbadi (2025), who found that the implementation of FinTech improves financial performance of commercial banks, particularly in regard to higher returns on equity. It is also contrasting to Madi *et al*. (2025) who have found that financial and regulatory technologies have a significant effect on the operational performance of SME. The discrepancy indicates that although FinTech tends to positively influence financial results, it can be situation-specific and can have different impacts depending on user experience, the quality of infrastructure, and the degree of digitalization.

In general, the results align with the general finding in the literature that the use of FinTech enhances business performance and efficiency, including the works by Elmahdy *et al.* (2025), Maimako *et al.* (2025), and Dottie and Moruku (2025). The study, however, contributes to the existing body of knowledge by showing that the effectiveness of FinTech applications is not the same, and online lending and online payment systems are more successful in operational efficiency than mobile banking. This emphasizes the relevance of varied FinTech adoption plans among SMEs to optimize the efficiency gains and enhance business sustainability.

5. Conclusion and Recommendations

This research examined the impact of financial technology (FinTech) on the performance of entrepreneurial businesses in the Ibadan metropolis, Oyo State, Nigeria, by looking at mobile banking technology, digital payment systems, and online lending systems. It was analyzed in terms of key indicators of operational efficiency such as the speed of operations, cost efficiency, revenue performance and issues related to the adoption of FinTech. The results have confirmed that the use of FinTech can contribute to the efficiency of operations significantly but the degree and direction of the effect differs depending on the type of FinTech used. In particular, mobile banking technology helps to boost the speed of business transactions through facilitating real-time financial operations, but its total impact on efficiency is limited with some operational difficulties. Digital payment systems became one of the primary forces of efficiency, cutting down transaction costs, enhancing the visibility of payments, and automating manual financial operations. The online lending platforms were also discovered to greatly increase the revenue performance through better access to credit, improved liquidity position, and business growth. Nevertheless, the study also found a variety of constraints that inhibit the full potential of FinTech adoption by entrepreneurial ventures. They are poor and unreliable internet connection, cyber insecurity, low digital entrepreneurship literacy, and poor regulatory facilitation. In spite of these difficulties, the joint model demonstrated that FinTech variables significantly contribute to the variation in operational efficiency (84.3 percent) and the strongest impact was on the digital payment systems. This validates the view that FinTech is a determining factor of efficient operations in an entrepreneurial business within the study area. In the light of the results of this study the following recommendations can be made:

i. Telecommunication service providers and government should improve on the internet connection and stability of networks within Ibadan and other regions of Oyo State. This will improve the ease of use of mobile banking, online payment systems and online lending platforms and hence will maximise its contribution to operations efficiency.
ii. Government agencies, financial institutions and other entrepreneurship support agencies ought to conduct frequent training programmes to enhance the digital capabilities of the entrepreneurs. Moreover, particular awareness on cybersecurity practices ought to be encouraged in order to minimize risks related to fraud, data breaches, and system abuse.
iii. Banks are advised to increase their availability of online lending systems by

making loan applications easier and minimizing credit restrictions. At the same time, regulatory agencies should establish supportive policies that encourage FinTech innovation while ensuring transparency, consumer protection, and financial stability.

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