

Impact of Financial Technology on Micro Small and Medium Enterprises (MSMEs): Evidence from Adamawa State-Nigeria

Abdullahi Ahmed (Ph.D)

ahmed655@adsu.edu.ng, +2348036490193

Department of Accounting, Adamawa State University, Mubi
Adamawa State-Nigeria

Sadiq Abubakar Umar

Umar752@adsu.edu.ng, +2348038803396

Department of Accounting, Adamawa State University, Mubi
Adamawa State-Nigeria

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Abstract

This study investigates the impact of Fintech Adoption (FA) on the growth and performance of Micro, Small, and Medium Enterprises (MSMEs) in Adamawa State, Nigeria. A descriptive survey design was employed, gathering data from 310 MSMEs across various sectors, including agriculture, manufacturing, and services. The data was analyzed using correlation and regression analyses to determine the relationships between the variables. The study reveals that fintech adoption positively and significantly impacts MSMEs growth and employee retention, indicating that fintech adoption is a crucial driver of business success in this region. However, the effects of basic fintech awareness (BFA) and customer base (CB) were mixed, suggesting the need for tailored fintech strategies based on specific business characteristics. The study recommends that policymakers and business support organizations in Adamawa state promote fintech adoption through targeted training programs and partnerships with fintech providers. Additionally, support should be provided to MSMEs in managing larger customer bases and leveraging fintech for sustainable growth. The study concludes that fintech adoption plays a significant role in enhancing MSME growth and competitiveness in Adamawa state. However, further research is needed to explore additional factors influencing MSMEs success and to develop more comprehensive models for a better understanding of the dynamics at play.

Keywords: Financial Technology, Fintech Adoption, Micro Small and Medium Enterprises (MSMEs)

Introduction

Fintech, short for financial technology, has brought about a revolutionary change in the financial industry across the globe. It encompasses an array of technological advancements aimed at improving financial services, making them more accessible, efficient, and affordable. In Nigeria, fintech has gained significant traction, primarily in the context of Micro, Small and Medium Enterprises (MSMEs).

Fintech pertains to the use of technology in the financial sector, including artificial intelligence, big data, biometrics, and distributed ledger technology such as blockchains (IMF, 2017). It is already bringing about changes in financial services, such as peer-to-peer funding gaining popularity, messaging applications offering payment services, machines that track online behaviour increasing analysis of cybersecurity risks, and credit scoring reflecting the vast amount of data on borrowers. Financial activity may shift from traditional intermediaries like banks to networks where market participants do business directly with each other. These changes could benefit end-users, but policymakers need to understand the impact of fintech on the structure and role of MSMEs.

The Micro, Small, and Medium Enterprises (MSMEs) sector is a critical contributor to the Nigerian economy, accounting for over 80% of the country's employment and 50% of its Gross Domestic Product (GDP) (NBS, 2010). However, despite the significant contributions of the sector, MSMEs in Nigeria face many challenges, including limited access to finance and inadequate infrastructure. The emergence of fintech provides an opportunity for MSMEs to overcome these challenges and drive growth and development. Fintech solutions such as mobile banking, online lending, and digital payments have the potential to improve access to finance, improve operational efficiency, and increase competitiveness (Putri, Isyanto, & Sumarni, 2023). However, despite the potential benefits of fintech adoption, its study about MSMEs and its consequent uptake among MSMEs in Nigeria remains low. This study aims to address this gap by identifying the underlying factors contributing to the low adoption of fintech among MSMEs in Nigeria and developing targeted strategies and interventions to promote its adoption and application. By doing so, this study seeks to unlock the untapped potential of MSMEs in Nigeria, driving economic growth, job creation, and financial inclusion in the country.

In sum, this paper aims to investigate the extent of awareness among business owners in Nigeria (Adamawa State in particular) about fintech as a source of financing for their companies and explore the level of fintech adoption and application among MSMEs in the country.

According to the 2021 Fintech Times report, Nigeria's fintech landscape consists of between 210 to 250 fintech companies, key stakeholders (banks, telecom companies, and the government), enablers, and funding partners (i.e universities and research institutions, investors, incubators, technology, and consumers). Frost and Sullivan predict that Nigeria's fintech revenue will reach \$543.3 million this year, which is a growth from \$153.1 million in 2017.

Nigeria's size and relatively strong financial and tech ecosystem present opportunities for the West African country. Fintech has been growing rapidly in Nigeria, and the sector has attracted significant funding, raising more than \$600 million between 2014 and 2019. Fintech have developed enhanced propositions across the value chain to address pain points in affordable payments, quick loans, flexible savings, and investments, among others, taking advantage of the lack of access to services, affordability issues, and poor user experience that consumers face (Kola-Oyenehin, Kuyoro, & Olanrewaju, 2020).

The PricewaterhouseCoopers (PwC) MSME Survey 2020 shows that the MSME sector is the growth engine of any economy, contributing to its development, job creation, and export, among others. The survey also highlights some persistent problems faced by MSMEs, such as payment policies imposed by big corporates that severely affect 33% of MSMEs whose

payments were delayed for over a month. The impact on cash flows worsens when you consider the double-digit interest rates or inflation.

Fintech has rapidly advanced and revolutionized the global business landscape, providing immense potential for enhancing operational efficiency, financial service accessibility, and overall business growth (Harsono & Suprapti, 2024). However, in Nigeria, a significant gap remains in the application and adoption of Fintech among Micro, Small, and Medium Enterprises (MSMEs). Despite the undeniable benefits and opportunities offered by Fintech solutions, MSMEs in Nigeria face various challenges that impede their effective use and integration of these technologies. This gap in Fintech application and adoption within the MSME sector has far-reaching implications for their growth, competitiveness, and overall contribution to the Nigerian economy.

To address this issue, it is crucial to conduct a comprehensive analysis of the underlying factors that contribute to the gap in Fintech application and adoption among MSMEs in Nigeria. This analysis will shed light on the specific barriers and constraints faced by MSMEs, such as limited awareness, inadequate infrastructure, regulatory complexities, and financial constraints. By identifying and understanding these challenges, policymakers, financial institutions, and stakeholders can develop targeted strategies and interventions to bridge the gap and promote the widespread application and adoption of Fintech among MSMEs in Nigeria. Such initiatives can potentially unlock the untapped potential of MSMEs, fostering economic growth, job creation, and financial inclusion in the country.

Review of Literature and Hypothesis Development

The literature on fintech and MSMEs in Nigeria highlights several key themes and findings. Firstly, it emphasizes the importance of MSMEs in the Nigerian economy. MSMEs contribute significantly to employment generation, poverty reduction, and economic growth. However, these enterprises often face numerous challenges, including limited access to finance, inadequate infrastructure, and a lack of financial literacy.

Nigeria's fintech sector has been growing rapidly in recent years, with over 200 standalone fintech companies and several fintech solutions offered by banks and mobile network operators as part of their product portfolio (Afrewise, 2022.). Between 2014 and 2019, Nigeria's fintech scene raised more than \$600 million in funding, attracting 25 per cent (\$122 million) of the \$491.6 million raised by African tech startups in 2019 alone (Abimbola, 2024). The sector is still relatively young, but it offers significant opportunities for fintech across the consumer spectrum, notably within the small and medium-sized enterprise (SME) and affluent segments and, increasingly, in the mass-market segment.

Fintech has the potential to address many of these challenges and empower MSMEs. Several studies have examined the impact of fintech on MSMEs in Nigeria and have found positive outcomes. For example, a study by Adegbite and Akinfolarin (2019) found that fintech platforms have improved access to finance for MSMEs, enabling them to expand their operations, invest in new technologies, and increase their competitiveness.

Moreover, fintech solutions have also enhanced financial inclusion among MSMEs in Nigeria. According to a study by Ogunleye and Ogunleye (2020), fintech platforms have reached

underserved areas and populations, providing them with access to formal financial services. This has led to increased financial literacy, improved savings, and better risk management for MSMEs.

Another important aspect highlighted in the literature is the role of regulatory frameworks in fostering fintech innovation and supporting MSMEs. Nigeria has made significant progress in this regard, with the Central Bank of Nigeria (CBN) introducing policies and guidelines to promote fintech development and protect consumers. However, some studies point out the need for further regulatory clarity and collaboration between regulators and fintech players to ensure a conducive environment for MSMEs (TheCityUK, 2023).

The literature also acknowledges some challenges and risks associated with fintech adoption among MSMEs in Nigeria. These include concerns over data privacy and security, limited digital literacy among MSME owners, and the digital divide between urban and rural areas. Addressing these challenges requires targeted policies and initiatives that focus on enhancing digital skills, promoting cybersecurity measures, and expanding digital infrastructure in underserved regions.

Overall, the reviewed literature highlights the transformative potential of fintech for MSMEs in Nigeria. It demonstrates that fintech can enhance financial inclusion, improve access to finance, and drive economic growth. However, there are still significant challenges to address, and further research is needed to understand the long-term impacts and implications of fintech adoption in the Nigerian MSME sector.

Based on the foregoing, the following hypotheses are formulated as follows:

H1 the current level of Fintech adoption among MSMEs in Nigeria is low

H2 Fintech adoption is negatively associated with the financial performance of MSMEs in Nigeria.

H3 Fintech adoption does not influence the competitiveness of MSMEs in Nigeria.

Methodology

The study employed a descriptive survey design to collect and analyze data on demographic characteristics, fintech adoption levels, and the impact of fintech on MSMEs' financial performance and competitiveness in Adamawa State, Nigeria. The target population are selected MSMEs operating in the state, covering many sectors such as agriculture, manufacturing, and services. A sample of 310 MSMEs was selected using simple random sampling to ensure representativeness.

Data was collected through a structured questionnaire spanning demographic information, fintech adoption levels, and the impact on financial performance and competitiveness, utilizing closed-ended and Likert scale questions for quantitative analysis. The questionnaires were distributed through direct visits and electronically, with respondents given a specific time frame to complete and return the questionnaires.

Data analysis involved descriptive statistics, correlation analysis using Pearson correlation coefficients, and multiple regression analysis to test hypotheses related to fintech adoption and its impact. Ethical considerations included confidentiality, voluntary participation, and informed consent. The validity of the questionnaire was ensured through pre-testing on a small sample of MSMEs outside the study area, and reliability was evaluated using Cronbach's alpha. This methodology provided a robust framework for collecting and analyzing data on MSMEs in Adamawa state, enabling meaningful conclusions and recommendations.

Result and Discussion

Table 1: Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.	Skewness	Std. Error-Skewness	Kurtosis	Std. Error - Kurtosis
Your Position in the Company (YPC)	310	1.0	3.0	1.82	0.787	0.325	0.138	-1.315	0.276
Duration with the Company (HLBC)	310	1.0	3.0	1.86	0.844	0.261	0.138	-1.551	0.276
MSME Size (SIZMSME)	310	1.0	3.0	1.34	0.5	1.011	0.138	-0.27	0.276
MSME Sector (SECMSME)	310	1.0	4.0	2.7	1.139	-0.171	0.138	-1.414	0.276
Fintech Adoption (FA)	310	1.38	3.63	2.3569	0.42598	0.088	0.138	0.025	0.276
Basic Fintech Awareness (BFA)	310	1.14	3.57	2.0493	0.43689	0.564	0.138	0.591	0.276
Customer Base (CB)	310	1.17	3.5	2.1812	0.58174	0.246	0.138	-0.818	0.276

Source: Computed by the Researcher using SPSS 26

The descriptive statistics provide a comprehensive overview of the variables studied, offering insights into the distribution, central tendency, and variability of key factors related to MSMEs in Adamawa state.

Firstly, the distribution of positions within companies varied, with a mean score of 1.82 and a standard deviation of 0.787. This indicates a slightly right-skewed distribution, suggesting that most respondents hold positions lower than the average, such as supervisors or casual staff. Additionally, a significant proportion of respondents (41.3%) are managers, followed by 35.2% as supervisors, and 23.5% as casual staff, highlighting a concentration of managers.

Secondly, the mean duration of employment is 1.86, with a standard deviation of 0.844, indicating that many employees have been with their companies for less than or around the average duration. The majority of respondents have been with their company for 1 to 5 years (43.2%), followed by 6 to 10 years (27.1%), and 11 years or more (29.7%), pointing towards a relatively stable workforce.

Furthermore, the distribution of MSME size indicates a predominance of micro-sized businesses, with 67.7% falling into this category. Additionally, the sectoral distribution of the respondents' MSMEs is fairly spread out across agriculture (19.0%), manufacturing (27.1%), services (18.7%), and other sectors (35.2%), reflecting a broad representation of different industries, with a slight emphasis on manufacturing and other undefined sectors.

Regarding fintech adoption, the mean score suggests moderate prevalence across MSMEs, with room for further growth. Similarly, basic fintech awareness is indicated to be moderate among respondents, suggesting potential for enhanced awareness. Lastly, the customer base of most businesses is moderate, with a significant number having a moderately small customer base, which could reflect challenges in market penetration or customer acquisition for MSMEs in the region.

The descriptive statistics offer a valuable overview of the MSMEs in Adamawa state. They indicate that most MSMEs are small and operate in various sectors, with differing levels of fintech adoption and awareness. The workforce in these MSMEs is stable, with many employees having significant tenure. These findings highlight the need for targeted interventions to improve fintech adoption and awareness, as well as to support MSMEs in expanding their operations and customer base. The distribution patterns also point to areas where further research and policy attention could help strengthen MSME growth and sustainability in the region.

Table 2: Correlation Matrix

Variable	Your Position	Tenure	MSME Size	Sector	FA (Fintech Adoption)	BFA (Basic Fintech Awareness)	CB (Customer Base)
Your Position	1.000	-0.056	-0.005	0.215** *	-0.086	0.054	0.061
Tenure	-0.056	1.000	0.162* *	-0.032	0.273**	0.132*	-0.207**
MSME Size	-0.005	0.162* *	1.000	0.058	0.072	-0.209**	-0.225**
Sector	-0.215** *	-0.032	0.058	1.000	-0.033	0.067	0.082
FA (Fintech Adoption)	-0.086	0.273* *	0.072	-0.033	1.000	0.289**	0.146*
BFA (Basic Fintech Awareness)	0.054	0.132*	-0.209* *	0.067	0.289**	1.000	0.525**
CB (Customer Base)	0.061	-0.207* *	-0.225* *	0.082	0.146*	0.524**	1.000

Source: Computed by the Researcher using SPSS 26

Upon examination of the correlations presented in Table 2, important insights into the interrelationships among variables pertinent to fintech adoption and MSME characteristics are revealed. The data demonstrates that fintech adoption is positively correlated with tenure, financial performance impact, and competitiveness among MSMEs, suggesting an interconnectedness between longer tenure, higher levels of fintech adoption, and increased competitiveness within the specific context of MSMEs in Adamawa state.

Furthermore, the negative correlations observed between MSME size and the impact of fintech adoption on financial performance and competitiveness indicate that smaller MSMEs may encounter greater obstacles in realizing the full potential of fintech adoption in enhancing their financial performance and competitiveness.

Moreover, the limited significant correlations of the sector of the MSME with most variables, except for a weak negative correlation with the position in the company, suggest that the sector of the MSME may exert relatively constrained direct influence on the variables under consideration.

Additionally, the lack of significant correlations of the position in the company with any variable implies a lack of direct influence on the factors associated with fintech adoption and MSME characteristics.

These correlations underscore the complex interplay among fintech adoption, MSME characteristics, and their ramifications for financial performance and competitiveness. These findings offer crucial insights for comprehending the intricate dynamics of fintech adoption within the specific context of MSMEs in Adamawa State Nigeria.

Table 3: Summary of Regression of the Impact of Fintech on MSMEs in Adamawa state.

Dependent Variable	Independent Variable	Coefficient	Standard Error	Significance Level	R-Square	Adjusted R-Square
Position in the Company (YPC)	FA	-0.203	0.109	*	0.016	0.006
	BFA	0.112	0.124			
	CB	0.060	0.090			
Duration with the Company (HLBC)	FA	0.504	0.107	***	0.182	0.174
	BFA	0.497	0.121	***		
	CB	-0.550	0.088	***		
MSME Size (SIZMSME)	FA	0.169	0.067	**	0.081	0.072
	BFA	-0.193	0.076	**		
	CB	-0.135	0.055	**		
MSME Sector (SECMSME)	FA	-0.151	0.159		0.010	0.001
	BFA	0.129	0.180			
	CB	0.127	0.131			

Source: Computed by the Researcher using SPSS 26

The regression analyses revealed some significant results regarding the impact of specific factors on Micro, Small, and Medium Enterprises (MSMEs) in Adamawa state. In particular, the analyses indicated that Fintech Adoption (FA) had a positive and significant impact on MSME size and duration with the company, while Basic Fintech Awareness (BFA) and Customer Base (CB) showed more complex and often negative relationships with these outcomes. Additionally, the analyses found that these factors did not meaningfully impact the sector in which an MSME operates. While these results provide valuable insights, the low R-Square values and the insignificance in several models suggest that additional factors not captured in these regressions might play a crucial role in these outcomes. This implies the need for further investigation and possibly more robust models to better understand the drivers of MSME success in Adamawa state.

Conclusion

Based on the analysis, it can be concluded that Fintech Adoption (FA) has a positive and significant impact on MSME growth, indicating that businesses embracing fintech are more likely to experience growth and retain employees. Basic Fintech Awareness (BFA) and Customer Base (CB) have shown mixed and often negative effects on MSME outcomes, suggesting nuanced benefits and potential limitations. Additionally, the study found insignificant effects of FA, BFA, and CB on the sector in which an MSME operates, implying that industry focus may be influenced by considerations other than fintech adoption or awareness. However, the analysis also highlighted the limitations of the model, indicating that other unmeasured factors, such as market conditions, access to finance, or management practices, may significantly influence MSME success.

In light of these findings, the following recommendations are proposed. Firstly, policymakers and business support organizations should promote the adoption of fintech solutions among MSMEs in Adamawa state through training programs, subsidies, or partnerships with fintech providers. Secondly, awareness campaigns should be carefully designed to highlight how MSMEs can leverage fintech for growth without overextending themselves, providing tailored advice and resources based on business size and industry. Additionally, support programs could focus on helping MSMEs develop strategies for managing larger customer bases, such as improving supply chain management, customer service, and operational efficiency. Lastly, further research is needed to identify other critical factors influencing MSME success in Adamawa state, exploring variables like access to finance, market conditions, or human capital, and developing more comprehensive models. Implementing these recommendations can provide better support to MSMEs in Adamawa state and Nigeria at large, helping them to grow and thrive in a competitive environment.

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