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FROM CASH TO DIGITAL: ASSESSING THE INFLUENCE OF NIGERIA'S CASHLESS ECONOMY ON SMES IN NASARAWA STATE, KARU LGA.

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Abstract

This study investigated the influence of Nigeria's cashless economy on the performance of small and medium-scale enterprises (SMEs) in Karu Local Government Area of Nasarawa State, with specific focus on internet banking and mobile banking. Using a survey design, primary data were collected through the administration of 400 questionnaires to SME operators, and the data were analysed using binary logistic regression. The findings revealed that both internet banking and mobile banking exert a negative but statistically insignificant effect on SME performance in Karu. These outcomes suggest that while digital banking platforms offer convenience and the promise of efficiency, their benefits remain largely unrealized in semi-urban contexts due to infrastructural constraints, unstable network services, high transaction charges, and low digital literacy. Many SMEs in Karu still rely heavily on cash transactions, thereby limiting the effectiveness of cashless instruments in enhancing profitability and growth. The study concludes that the cashless economy, as currently implemented, has yet to generate meaningful performance improvements for SMEs in Karu. It recommends stronger digital infrastructure, reduced transaction costs, and improved financial literacy as prerequisites for realizing the potential of internet and mobile banking in driving SME development. The findings underscore the contingent nature of digital finance adoption, demonstrating that regulatory initiatives such as the cashless policy can only yield performance gains for SMEs when matched with enabling infrastructure, affordable costs, and broader economic stability.

Keywords: *Cashless Policy, internet banking and mobile banking, Small and Medium-Scale Enterprises*

JEL Classification: G21, 016, 033, C25

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Introduction

The emergence of cashless policies has significantly redefined financial systems worldwide, altering how individuals, enterprises, and governments engage in transactions in the modern era (World Bank, 2020). Governments and financial institutions have increasingly promoted electronic payment systems as instruments for enhancing efficiency, reducing the risks associated with cash handling, and fostering sustainable economic growth (Demirgüç-Kunt et al., 2018). By 2017, global financial inclusion statistics revealed that more than 60% of the world's population had access to formal financial services, a development largely driven by the diffusion of digital innovations such as mobile banking and electronic payment platforms (World Bank, 2020). In advanced economies where strong technological infrastructures already exist, the integration of digital transactions has not only increased convenience but has also enhanced transparency, accountability, and productivity in economic systems (Demirgüç-Kunt et al., 2018). This global movement toward a cashless society demonstrates the growing recognition of financial technology as an indispensable driver of modern economic growth.

In Africa, the transformation towards cashless systems has been accelerated by mobile money innovations, which have significantly expanded access to financial services among populations historically excluded from formal banking (Aker & Mbiti, 2010). The success story of Kenya's M-Pesa illustrates the extent to which digital financial systems can reshape economies, as by 2021, the platform had registered over 40 million users, representing nearly 70% of the adult population and facilitating daily transactions worth millions of dollars (Suri & Jack, 2016). This innovation has been associated with increased household savings, expanded entrepreneurship, and improved poverty alleviation outcomes, highlighting the potential of digital platforms to address financial exclusion (Suri & Jack, 2016). South Africa has also recorded considerable progress with the adoption of mobile banking and digital financial platforms, which have enhanced financial access and contributed to improved business efficiency and reduced cash dependency (GSMA, 2019). The African continent, with its rapid mobile phone penetration estimated at over 44% in 2019, presents a fertile ground for cashless innovation, and this technological spread has been linked to curbing corruption, minimizing money laundering, and enhancing financial transparency (GSMA, 2019). These successes underscore the broader significance of cashless policies in Africa as key strategies for economic transformation and inclusive growth.

In Nigeria, the Central Bank of Nigeria (CBN) introduced the Cashless Nigeria policy in 2012 as part of efforts to reduce the dominance of cash in the economy and to enhance financial inclusion through

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digital platforms (CBN, 2021). Complementing this was the National Financial Inclusion Strategy launched in 2018, which emphasized digital banking and electronic payments as pillars for strengthening the financial system and achieving developmental goals (CBN, 2021). The results of these initiatives have been reflected in the exponential growth of electronic payment transactions, with volumes increasing from 1.7 billion in 2018 to 3.4 billion in 2020, signaling a steady increase in adoption rates (CBN, 2021). Small and medium-scale enterprises (SMEs) are particularly central to Nigeria's economy, contributing approximately 48% to the nation's GDP and accounting for over 50% of employment opportunities, thereby underscoring their role as the backbone of national development (NBS, 2020). Despite these developments, challenges such as infrastructural deficits, low levels of digital literacy, irregular electricity supply, and high costs of internet connectivity continue to limit the effective adoption of cashless systems among SMEs, leaving many businesses reliant on cash-based transactions and exposed to risks such as theft, fraud, inefficiency, and reduced competitiveness (Olowu & Oladipo, 2017).

At the state level, Nasarawa State, situated in the North-Central region of Nigeria, has been making efforts to align with national strategies for financial inclusion, recognizing the central role of SMEs in driving economic activity and reducing poverty (Nasarawa State Ministry of Commerce and Industry, 2022). The economy of the state is predominantly agrarian, and SMEs constitute more than 80% of registered businesses, providing employment and income for the majority of its population (Nasarawa State Ministry of Commerce and Industry, 2022). Prior to the adoption of cashless initiatives, SMEs in the state struggled with inefficiencies associated with cash-based transactions, including losses from theft, slow transaction processes, and limited integration into formal financial systems, which constrained their profitability and long-term growth (Olowu & Oladipo, 2017). With the CBN's drive for digital financial services and the introduction of platforms such as Point of Sale (POS) machines and mobile banking applications, new opportunities have emerged for improving SME efficiency and profitability in the state (CBN, 2021).

Karu Local Government Area (LGA), one of the most commercially vibrant areas in Nasarawa State, provides a unique case for examining the impact of cashless policy on SMEs due to its rapid economic and population growth (Nasarawa State Ministry of Commerce and Industry, 2022). With a population estimated at over 300,000 residents as of 2021, Karu serves as a peri-urban hub with significant trading, manufacturing, and service-oriented activities, making SMEs central to its local economy (NBS, 2020).

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The adoption of electronic payment systems has been rising in Karu, facilitated by the expansion of mobile networks and increased presence of financial service agents, thereby reducing reliance on cash in many business transactions (GSMA, 2019). Nevertheless, many SMEs continue to grapple with challenges such as low digital literacy, infrastructural constraints, irregular electricity supply, and cultural resistance to abandoning traditional cash-based methods of conducting business, factors which hinder the full realization of the benefits of cashless policies (Olowu & Oladipo, 2017).

The gap between policy intentions and actual outcomes highlights a pressing issue within the Nigerian SME sector. Empirical research suggests that cashless policies and digital financial systems have the potential to reduce transaction costs, expand market reach, improve financial record-keeping, and enhance overall business performance (Aker & Mbiti, 2010). Evidence from Kenya confirms that digital financial services positively influence savings and investment behaviors, which in turn improve business performance (Suri & Jack, 2016). However, findings in Nigeria present a mixed picture, as some studies reveal significant benefits while others emphasize persistent barriers such as infrastructure deficits, poor literacy, and resistance to innovation, which reduce the effectiveness of cashless systems (Olowu & Oladipo, 2017). These inconsistencies in the literature point to the need for context-specific research, particularly in peri-urban regions like Karu LGA, where SMEs drive economic activities but often operate in environments that limit their ability to take advantage of digital systems (NBS, 2020).

The motivation for this study arises from the observed gap in knowledge concerning the actual impact of Nigeria's cashless policy on SMEs in Karu LGA of Nasarawa State. While policy frameworks at the national and state levels emphasize the significance of digital finance for improving business operations, the degree to which SMEs in Karu have experienced profitability gains or encountered operational challenges due to these policies remains unclear (CBN, 2021). The divergent findings from earlier studies, with some highlighting positive outcomes and others underscoring barriers, further reinforce the importance of empirical analysis that examines the realities of SMEs in peri-urban settings (Aker & Mbiti, 2010; Olowu & Oladipo, 2017). By focusing on SMEs in Karu LGA, this study contributes to bridging the knowledge gap, offering critical insights into how digital financial innovations affect local business profitability, and informing strategies to optimize cashless policies in similar Nigerian contexts (Nasarawa State Ministry of Commerce and Industry, 2022).

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2.1 CONCEPTUAL REVIEW

2.1.1 Cashless Policy

A cashless policy can be understood as a monetary strategy introduced by financial authorities to limit the circulation of physical cash and promote the use of electronic channels for payments and receipts of money in economic transactions (Yusuf, Adedina, & Egbekube, 2015). It reflects a system where financial exchanges are carried out with minimal reliance on cash, relying instead on electronic transfers, thereby reducing the handling of physical currency (Yusuf et al., 2015). The main objective of a cashless framework is not to completely eliminate cash but to reduce its prevalence in circulation, while strengthening the use of digital alternatives such as bank transfers, mobile payments, and other electronic platforms for settling transactions (Kumar & Singh, 2020).

Scholars have conceptualized cashless policy in various ways. For instance, Kumar and Singh (2020) describe it as a planned initiative designed to replace cash transactions with digital payment systems to improve efficiency, transparency, and security in financial dealings. Similarly, Johnson (2019) views it as a set of government or institutional measures intended to promote or mandate electronic transactions over cash, thereby supporting the broader agenda of developing a cashless economy. Smith (2021) adds that a cashless policy provides a framework that enhances the use of digital payments while minimizing the risks and costs associated with cash management. Likewise, Lee (2018) emphasizes its role in advancing financial inclusion by encouraging wider adoption of electronic payment methods, which reduces overdependence on physical money. Patel (2022) further highlights that such policies include the development of digital infrastructure and regulatory mechanisms necessary to expand the adoption of electronic transactions and stimulate economic growth.

According to Adewale (2012), the idea of a cashless economy illustrates a gradual or even radical transition from the dominance of cash-based payments to the widespread adoption of alternative non-cash methods for commercial, personal, and international transactions. In this regard, common instruments of cashless policies include mobile banking, internet banking, telephone banking, debit and credit cards, implants, point-of-sale (POS) terminals, and automated teller machines (ATMs), among others (Adewale, 2012). This global trend toward cashless systems has been adopted by many nations, with Nigeria also making significant progress in implementing such policies to modernize its payment structure (Adewale, 2012).

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2.1.2 Small and Medium-Scale Enterprises

The concept of small and medium-scale enterprises (SMEs) does not have a universally agreed definition, as the classification depends largely on subjective and qualitative judgments across countries (Adeyemi & Bello, 2015). In advanced economies such as the United States, Canada, and the United Kingdom, SMEs are typically defined by parameters like annual turnover and workforce size (Olawale & Garwe, 2010). For instance, in the United Kingdom, a small-scale enterprise is often regarded as a business with an annual turnover of not more than two million pounds and employing fewer than 200 workers (Akinwale, 2018). Similarly, in Japan, the definition of SMEs varies according to industry type and is usually determined by paid-up capital and the number of employees (Okafor & Uche, 2019). Thus, Japanese classification distinguishes manufacturing firms with up to 100 million yen in capital and 300 workers, wholesale trade firms with 30 million yen in capital and 100 workers, and retail/service firms with 10 million yen in capital and 50 workers (Ogunyemi, 2017).

In Nigeria, however, there is no precise or universally accepted definition separating small-scale from medium-scale businesses (Osei & Agyapong, 2010). The Central Bank of Nigeria, through its Monetary Policy Circular No. 22 of 1988, defined small enterprises as those with annual turnover not exceeding ₦500,000 (Olowe, 2013). Furthermore, in the 1990 national budget, the federal government defined SMEs for commercial bank loans as businesses with annual turnover not above ₦500,000, and for merchant bank loans, those with capital investment not exceeding ₦2 million (excluding land) or a maximum of ₦5 million (Adebayo, 2016).

2.1.3 SMEs Performance

In general usage, performance refers to the achievement of objectives within a particular area of activity (Ibrahim & Musa, 2014). It reflects how individuals or organizations successfully carry out tasks to accomplish set goals (Nwachukwu & Eke, 2015). According to Bello and Ahmed (2017), performance encompasses the measurable achievements within a domain, whether economic, financial, technical, or social. The term itself originates from the Latin word performare, meaning to accomplish an assigned task, and later from the English verb "to perform," implying an act requiring ability and skill (Odu & Abiola, 2016).

Within the business context, performance is often employed to assess organizational output and

competitiveness (Ojo, 2012). However, scholars have highlighted that there is no single universally accepted definition of "business performance," as interpretations vary from abstract to clearly defined perspectives (Lawal & Olayemi, 2018). Business performance generally reflects the degree to which an enterprise achieves its goals relative to expected outcomes within a given period (Adetunji & Ibrahim, 2019). It can also be explained as the level of success attained by firms in meeting their set objectives (Ogunleye & Fagbemi, 2017).

At the organizational level, performance is seen as a multidimensional construct involving inputs from management, marketing, finance, economics, and human resource practices (Eze & Nwankwo, 2013). For instance, Adepoju and Ayodele (2014) note that performance can be assessed by evaluating human resource efficiency, supplier reliability, product and service quality, and financial sustainability. Measuring enterprise performance is thus a critical activity that provides insights into the strength and competitiveness of a business (Balogun & Salami, 2016).

In the literature, performance assessment commonly uses both financial and non-financial indicators, which together provide a more balanced view of organizational success (Okoro & Danjuma, 2018). Financial measures include profit margins, return on investment, and turnover, while non-financial measures consider customer satisfaction, market reach, and employee development (Ayoade, 2019). The integration of both sets of measures allows SMEs to make more informed strategic decisions that ensure long-term survival and competitiveness (Chukwu & Osei, 2020).

2.2 Theoretical Framework

The theoretical foundation of this study is grounded in **the Institutional Theory, the Balanced Scorecard Theory, and the Contingency Theory,** as they collectively provide a holistic framework for analyzing the performance of small businesses under the evolving dynamics of a cashless economy. Institutional Theory, advanced by DiMaggio and Powell in 1983, assumes that organizations are significantly shaped by the formal rules, regulations, and normative pressures that exist within their operating environment. Its application to this study lies in the recognition that the Central Bank of Nigeria's cashless policy, regulatory frameworks, and societal expectations around digital transactions exert strong institutional pressures on small businesses in Karu LGA, compelling them to adopt electronic payment systems to remain legitimate, competitive, and sustainable.

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Vol. 1 No. 1, September, 2025, Pg 1- 20
DOI: https://doi.org/10.33003/ijefmds-2023-0705-2028

The Balanced Scorecard Theory, propounded by Kaplan and Norton in 1992, assumes that firm performance cannot be fully measured by financial indicators alone but must also incorporate non-financial dimensions such as customer satisfaction, innovation, internal processes, and learning. In this study, the Balanced Scorecard is relevant because cashless transactions affect both financial performance, through improved sales efficiency and reduced cash handling risks, and non-financial outcomes, through enhanced customer trust, technological adaptability, and competitive positioning of SMEs in semi-urban economies. Contingency Theory, first introduced by Fiedler in 1964, assumes that there is no universally optimal way of managing or structuring an organization and that performance depends on how well strategies align with environmental conditions. This study applies the Contingency Theory by acknowledging that the impact of cashless transactions on SMEs in Karu is contingent on contextual realities such as infrastructure, digital literacy, consumer behavior, and economic conditions, meaning that the success of SMEs depends on their ability to adapt their operations to the opportunities and constraints of a semi-urban cashless environment.

Taken together, these theories provide a comprehensive analytical framework that explains the interconnectedness between institutional pressures, multi-dimensional performance evaluation, and adaptive management strategies. In relation to cashless transactions and small business performance in semi-urban economies, particularly Karu LGA, they collectively suggest that the effectiveness of SMEs depends not only on compliance with financial regulations but also on their ability to balance financial and non-financial performance outcomes while aligning their strategies with the realities of their environment. This integration underscores that the cashless policy is not merely a regulatory initiative but a transformative force that redefines performance metrics, compels adaptive strategies, and reshapes the sustainability of small businesses in semi-urban economies.

2.3 Empirical review

Akeke, et al (2024) examined the effect of Cashless Policy and its Implications on Micro, Small, and Medium Enterprises in the Ojo Area of Lagos State. Primary data was used with a structured questionnaire distributed to a sample of one hundred (100) micro, medium, and small business operators in the study area. Descriptive statistics and logistic regression model were adopted for data analysis. The findings revealed that the transition to a cashless economy using digital payment has a significant effect on the performance of small businesses. The study recommended that the government ensure better digital infrastructure, affordable technology solutions, and capacity-building initiatives

for small business operators to boost the acceptability of cashless policy and drive financial inclusion in Nigeria.

Efut (2024) investigated the effect of cashless policy on the survival of small and micro-scale businesses in Abuja, Nigeria. The main objective of the study was to evaluate the factors that impede the adaptation of the cashless policy in Abuja. The study relied on primary data collected through the administration of a structured questionnaire to the operators of small businesses in the study area. The findings revealed that there are conveniences in electronic transactions, particularly POS, ATM, and Mobile banking. It was also revealed that automatic electronic payments assist banks in making deposits and by extension, providing the needed funds to be loaned to small businesses. The study recommended, amongst others, that the government should embark on viable reforms that will increase the viability of small-scale businesses in Nigeria.

Ehiedu, et al (2024) examined the effect of cashless policy on small and medium scale enterprises output (SMSEO) in Nigeria from the period of 2000 to 2022 (23 years). The study made use of aggregate secondary data from CBN Statistical Bulletin and CBN Annual Report, for the duration of the study. Cashless policy measures; Automated Teller Machine (ATM), Point of Sale (POS), Internet Banking (INTB) and Mobile Banking (MB) was analyzed with small and medium scale enterprises output (SMSEO) in Nigeria. The data set was described using descriptive statistics, and the unit root test was conducted to ascertain if the data are stationary to have accurate regression result. The correlation analysis was used to ascertain the co-movement of the independent variables in relation to the dependent variable while the Multiple Regression analysis was employed with the aid of E- view version 9.0 to test the research hypotheses raised. The findings revealed that ATM, POS and INTB transactions significantly affect SMSEO, while MOB transactions have an insignificant effect on SMSEO in Nigeria. Hence, the study concluded that cashless policy has a significant influence on small and medium-scale enterprises' output in Nigeria. The study recommended, among others, that all the DMBs operating in Nigeria should keep adopting and using cashless payment instruments in their operations to continually enhance the quality of their products and services, thereby increasing their performance, thus enhancing small and medium-scale enterprises' output in Nigeria.

3.1 METHODOLOGY

This study adopted a logistic regression to analyze the influence of Nigeria's cashless economy on the performance of Small and Medium-sized Enterprises (SMEs) in Karu Local

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Vol. 1 No. 1, September, 2025, Pg 1- 20
DOI: https://doi.org/10.33003/ijefmds-2023-0705-2028

Government Area of Nasarawa State. The design was chosen because it enables the measurement of relationships between independent variables—Internet Banking (IB) and Mobile Banking (MB)—and the dependent variable—SME Performance (SMEP). The study relied on primary data, obtained through the administration of structured questionnaires to SME owners and managers within the study area. The population of the study comprised all registered SMEs in Karu LGA as identified by SMEDAN (2017), totaling 761 enterprises, spread across five major towns: Mararaba, Ado, New Karu, New Nyanya, and Masaka. The sample size was determined using Taro Yamane's (1967) formula at a 5% level of significance, yielding a sample of 400 SMEs. To ensure proportional representation across the five towns, Neyman's allocation technique was employed, distributing questionnaires as follows: Mararaba (96), Ado (79), New Nyanya (75), New Karu (65), and Masaka (85). The simple random sampling technique was further applied to give each enterprise an equal chance of selection. Data collected were coded and analyzed using descriptive statistics (frequency, mean, standard deviation) and inferential statistics. Specifically, the study employed the logistic regression model, suitable for categorical dependent variables such as SME performance (classified as "improved" or "not improved"). The study employed the simple random sampling technique to ensure every registered SME within the study areas had an equal chance of selection. Data collected were coded, scaled, and subjected to statistical analysis using SPSS and STATA to test the relationship between cashless policy adoption and SME performance.

3.2 Model Specification

The study adapts the logistic regression model following the framework of Akeke, et al (2024), but applied to the context of digital finance and SMEs in Nigeria. Since the dependent variable (SME performance) is binary, the error term is assumed to follow a logistic distribution.

The model is specified as:

$$Y = p / (1 - p) = \beta 0 + \beta 1X1 + \beta 2X2 + \ldots + \beta kXk + \varepsilon t \quad \ldots (1)$$

Where:

Y = SME Performance (categorical: improved = 1, not improved = 0)

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Vol. 1 No. 1, September, 2025, Pg 1- 20
DOI: https://doi.org/10.33003/ijefmds-2023-0705-2028

p = probability of improved SME performance

X1, X2, …, Xk = explanatory variables

εt = error term

Model 1

SMEP = f(IB, MB)

$$SMEP = \beta 0 + \beta 1IB + \beta 2MB + \varepsilon t \quad \ldots (2)$$

Where:

SMEP = SME Performance (measured in profitability, sales, market reach, and operational efficiency)

IB = Internet Banking

MB = Mobile Banking

β0 = constant term

β1, β2 = coefficients of independent variables

εt = error term

4.1 DATA ANALYSIS AND DISCUSSIONS

It was observed that out of the 400 SMEs questionnaires targeted across the selected towns, 16 were not returned, while 9 were not properly filled, thus making the properly filled and usable questionnaires to be 375, which were returned. The 375 properly filled questionnaires were therefore used for the econometric analysis. This shows that 95 percent of the administered questionnaires were valid and formed the basis of the study's investigation into the Nigeria's cashless economy performance on Small and Medium-sized Enterprises (SMEs) in Karu Local Government Area of Nasarawa State.

4.1.1 Results and Discussion

Model Estimation Results

The results obtained from the estimation of the model are presented and discussed below

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Vol. 1 No. 1, September, 2025, Pg 1- 20
DOI: https://doi.org/10.33003/ijefmds-2023-0705-2028

Table 1 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	319.922[a]	.020	.030

Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

The results in Table 1 show the variance in the dependent variable that is explained by the model or the independent variables. The Nagelkerke R square shows that the model explains 30 percent of the variance in the dependent variable, while the Cox &Snell R square shows that the model explains 20 percent of the variance in the dependent variable. Generally, we can say that the variance in the dependent variable, as explained by the model, ranges from 20 to 30 percent.

Table 2 Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	5.142	5	.399

The results presented in Table 2 shows the Hosmer and Lemeshow Test, which is a chi-square statistic of goodness of fit of the model. According to the Hosmer and Lemeshow Test, the P-value must not be statistically significant. That is, the P value must be greater than .05 for the model to adequately describe the data or have goodness of fit. From the table, we can see that the P-value, which is .399, is greater than .05; therefore, based on the Hosmer and Lemeshow Test, we can say that the model has a good fit and adequately describes the data.

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Vol. 1 No. 1, September, 2025, Pg 1- 20
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Test of Hypotheses

Table 3 Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	Df	Sig.	Exp (B)	Lower	Upper
Step 1[a]	IB	-.628	.353	3.168	1	.075	.534	.267	1.066
	MB	-.039	.312	.016	1	.901	.962	.522	1.774
	Constant	1.455	.463	9.864	1	.002	4.284		

Variable(s) entered on step 1: IB, MB,

Table 3 presents the effect of changes in the independent variables on the dependent variable in the model. As indicated in the table, at a unit increase in Internet Banking (IB), the probability of the outcome decreases by –0.628, which yields an odds ratio of 0.534 with a 95 percent confidence interval ranging between 0.267 and 1.066. Similarly, at a unit increase in Mobile Banking (MB), the probability of the outcome decreases by –0.039, resulting in an odds ratio of 0.962 with a 95 percent confidence interval ranging between 0.522 and 1.774.

Based on the logistic regression results shown in Table 3, the research hypotheses formulated in Chapter One are tested as follows:

Test of Hypothesis One

The hypothesis is stated thus:

$H0_1$: Internet Banking has no significant effect on the performance of small and medium-scale enterprises in Karu Local Government Area of Nasarawa State.

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Vol. 1 No. 1, September, 2025, Pg 1- 20
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Considering the P-value (sig. value) for the coefficient of IB corresponding to the Wald statistic in Table 3, which is 3.168, we observe that 0.075 > 0.05 level of significance. We therefore accept H0 and conclude that Internet Banking (IB) has no significant effect on the performance of small and medium-scale enterprises in Karu Local Government Area of Nasarawa State.

Test of Hypothesis Two

The hypothesis is stated thus:

$H0_2$: Mobile Banking has no significant effect on the performance of small and medium-scale enterprises in Karu Local Government Area of Nasarawa State.

Considering the P-value (sig. value) for the coefficient of MB corresponding to the Wald statistic in Table 3, which is 0.016, we observe that 0.901 > 0.05 level of significance. We therefore accept H0 and conclude that Mobile Banking (MB) has no significant effect on the performance of small and medium-scale enterprises in Karu Local Government Area of Nasarawa State.

4.3 Discussion of findings

This study revealed that Internet Banking (IB) and Mobile Banking (MB) have a negative but no significant effect on the performance of small and medium-scale enterprises (SMEs) in Karu Local Government Area of Nasarawa State. This outcome may be attributed to poor internet infrastructure, unstable network connectivity, and high transaction charges imposed by banks, which increase the cost of digital transactions and erode the already slim profit margins of SMEs in semi-urban economies like Karu. Many SME operators in the area still rely heavily on cash transactions due to these constraints, which limits the potential benefits of internet and mobile banking.

This finding aligns partly with the empirical study of Efut (2024), who found that while mobile and internet-based platforms provide convenience, infrastructural and systemic barriers limit their effectiveness in sustaining small business survival in Abuja. However, it contrasts with the work of Akeke et al. (2024), who reported that the adoption of digital payments had a significant positive effect on the performance of SMEs in Ojo, Lagos State, where better infrastructure and wider acceptance of

cashless systems may have facilitated stronger performance outcomes. Similarly, the result of this study diverges from Ehiedu et al. (2024), who established that Internet Banking significantly affects SME output in Nigeria, though they also found Mobile Banking to be largely insignificant. The divergence can be explained by contextual differences in infrastructure, awareness levels, and consumer preferences between Karu and other regions.

Theoretically, these findings are consistent with Contingency Theory (Fiedler, 1964), which emphasizes that organizational outcomes depend on how strategies align with environmental conditions. The limited effect of internet and mobile banking in Karu underscores the contingent role of infrastructural readiness, financial literacy, and consumer adoption in shaping the performance of SMEs in semi-urban contexts. In addition, Institutional Theory (DiMaggio & Powell, 1983) helps explain why SMEs in Karu feel compelled to adopt internet and mobile banking due to pressures from the Central Bank of Nigeria's regulatory cashless policy, yet institutional compliance alone does not guarantee performance improvements without supportive infrastructure and enabling conditions. Finally, the findings also speak to the Balanced Scorecard perspective (Kaplan & Norton, 1992), as the cashless policy has not yet translated into measurable financial performance for SMEs in Karu, but it has indirectly influenced non-financial outcomes such as customer trust and gradual technological adaptability.

Taken together, these results highlight that while internet and mobile banking represent critical components of Nigeria's cashless economy, their effects on SME performance in semi-urban areas like Karu remain limited by structural and contextual challenges. This underscores the need for improved digital infrastructure, reduced transaction charges, and targeted capacity-building initiatives to enable SMEs to derive full performance benefits from cashless innovations.

4.4 Policy Implications of the Findings

The findings on Internet banking and mobile banking have several important policy implications for strengthening Nigeria's cashless economy and enhancing SME performance, particularly in Karu Local Government Area.

First, the monetary authority and deposit money banks should prioritize the expansion and standardization of digital infrastructure to support Internet banking services. Reliable broadband access

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and uninterrupted network services are critical for ensuring that SMEs and their customers can conduct transactions smoothly. Without this, the promise of Internet banking as a driver of financial inclusion remains underutilized.

Second, transaction charges associated with Internet and mobile banking should be reviewed and rationalized by the Central Bank of Nigeria (CBN) and other regulators. Excessive or unclear charges discourage SME operators from fully adopting these channels. A transparent and affordable fee structure would not only promote wider usage but also enhance the competitiveness of SMEs in local and regional markets.

Third, cybersecurity and consumer protection require urgent attention. The increasing cases of fraud in online and mobile transactions have undermined customer trust in digital banking. To address this, regulators and financial institutions must strengthen fraud detection systems, enhance two-factor authentication, and launch awareness campaigns to educate SME operators on safe digital practices.

Fourth, the adoption of mobile banking presents an opportunity for policymakers to deepen financial inclusion in semi-urban areas such as Karu. Mobile banking platforms are relatively affordable, easy to use, and accessible via basic mobile phones, making them a strategic tool for reaching underserved populations. However, this potential can only be realized if network providers and banks collaborate to expand mobile coverage and improve service reliability.

Finally, broader macroeconomic stability measures—particularly in addressing inflationary pressures—are necessary to ensure that SMEs can meaningfully benefit from Internet and mobile banking innovations. High inflation erodes purchasing power, increases transaction risks, and discourages investments in digital payment systems. Stabilizing the macroeconomic environment will therefore complement cashless policy reforms and improve SME resilience.

In summary, targeted reforms in digital infrastructure, cost management, cybersecurity, and macroeconomic stabilization will be essential to unlock the transformative potential of Internet and mobile banking for SMEs under Nigeria's cashless economy agenda.

5.1 Conclusions

The study reveals that the adoption of internet banking and mobile banking has not produced a significant impact on the performance of SMEs in Karu LGA, Nasarawa State. Although these digital banking platforms provide convenience, enhance security by reducing the risks of handling cash, and promote financial inclusion, they have not translated into improved profitability or business growth for SMEs in the area. The findings suggest that while internet and mobile banking can serve as complementary tools for safer transactions, their contribution to SME profitability remains minimal. Hence, improving access to finance, reducing operational barriers, and strengthening the overall business environment are more critical drivers of SME sustainability and performance in Karu LGA.

5.2 Recommendations

Based on the findings, the following recommendations are proposed:

1. Improve Infrastructure and Reduce Transaction Costs: The monetary authority should strengthen internet connectivity across deposit money banks and eliminate excessive transaction charges linked with internet and mobile banking services. This will enhance the adoption of these platforms among SMEs and reduce the cost of doing business.

2. Address Structural Constraints: The persistent challenges of rising input costs, unreliable electricity supply, and insecurity should be urgently tackled by the government. Resolving these fundamental issues will have a greater influence on SME profitability than digital banking adoption alone.

3. Supportive Government Interventions: The government at federal, state, and local levels should provide deliberate support to SMEs through affordable financing schemes, access to modern technological tools, and the creation of a more enabling business environment. By addressing these factors, internet banking and mobile banking can better complement broader efforts to strengthen SME performance and economic development in Nigeria.

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