

An Analysis of the Impact of Cashless Policy on Customer Patronage of Small and Medium Enterprises in the Federal Capital Territory, Abuja

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Abstract:

The global shift toward cashless economies, driven by technological advancements, has transformed how Small and Medium Enterprises (SMEs) attract and retain customers. In Nigeria, the Central Bank of Nigeria (CBN) introduced a cashless policy in 2012 to modernize payment systems, reduce cash reliance, and enhance financial inclusion. This study examines the impact of cashless policy adoption, specifically through online banking and QR code payments, on customer patronage of SMEs in the Federal Capital Territory (FCT), Abuja. A survey research design was employed, collecting data from 309 SMEs, selected via simple random sampling from a population of 22,861 registered SMEs (SMEDAN, 2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) was used for analysis. Results show that online banking significantly enhances customer patronage (path coefficient = 0.756, $p = 0.000$), driven by improved transaction efficiency and trust-building features. Conversely, QR code payments show no significant impact (path coefficient = 0.066, $p = 0.051$), likely due to low trust and infrastructural barriers. Recommendations include enhancing online banking with SME-tailored features like instant payment notifications and loyalty programs, and promoting QR code adoption through awareness campaigns and improved digital infrastructure to boost customer loyalty and retention.

Keywords: Cashless Policy, Online Banking, QR Code Payments, Customer Patronage, SMEs.

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1. INTRODUCTION

Customer patronage, defined as the consistent engagement and loyalty of consumers toward a business due to satisfaction, trust, and perceived value, is vital for the sustainability of Small and Medium Enterprises (SMEs). In Nigeria's Federal Capital Territory (FCT), Abuja, SMEs rely on patronage to drive economic growth, job creation, and innovation (Pandey et al., 2025; Tojiyev & Rakhmonaliev, 2025). The adoption of cashless policies, particularly through online banking and QR code payments, has reshaped SME operations by enhancing transaction convenience, fostering trust, and improving customer retention. Globally, cashless systems have bolstered SME patronage, as seen in Sweden, where cash transactions constitute less than 10% of payments, enabling businesses to leverage digital platforms for seamless customer engagement (Rogoff, 2022). In Africa, Kenya's M-Pesa has enhanced SME patronage by improving financial access and transaction efficiency (Osabutey & Jackson, 2023).

The adoption of cashless policies, particularly through tools like online banking and QR code payments, has transformed how SMEs operate by enhancing transaction efficiency, financial transparency, and customer convenience. Globally, cashless systems have driven SME growth, as seen in advanced economies like Sweden, where cash usage is below 10% of transactions, enabling businesses to leverage digital platforms for seamless operations (Rogoff, 2022). In Africa, mobile money platforms like Kenya's M-Pesa have boosted SME patronage by improving financial inclusion and operational efficiency (Osabutey & Jackson, 2023).

In Nigeria, the Central Bank of Nigeria (CBN) has promoted cashless policies since 2012 to modernize payment systems, with tools like online banking and QR code payments gaining traction among SMEs in Abuja. Online banking enables SMEs to manage financial transactions remotely, reducing costs and improving liquidity, while QR code payments offer a contactless, secure, and efficient payment alternative, enhancing customer satisfaction and sales volume (Okonkwo, 2022; Ledi et al., 2023).

Despite the CBN's efforts to advance cashless policies since 2012 (Ehiedu et al., 2024), the extent to which online banking and QR code payments enhance SME customer patronage in Abuja remains underexplored. However, challenges such as unreliable internet, high transaction fees, and low digital literacy may hinder adoption, potentially limiting the benefits of these tools on SME customer patronage (Uruakpa, 2023; Shekhar, 2023). This study is necessary to address this gap, offering insights into the opportunities and challenges of adopting these cashless tools. By examining their impact on customer patronage, the study aims to inform policymakers and stakeholders on strategies to optimize cashless policy implementation, fostering SME growth and economic development in Abuja. Therefore, this study examines impact of cashless policy on the customer patronage of SMEs in the Federal Capital Territory, Abuja.

The specific objectives are:

- a) To examine the impact of online banking on customer patronage of SMEs in the Federal Capital Territory, Abuja.
- b) To assess the influence of QR code payments on customer patronage of

The following null hypotheses have been formulated in alignment with the study's specific objectives:

H₀₁: Online banking has no significant impact on customer patronage of SMEs in the Federal Capital Territory, Abuja.

H₀₂: QR Code Payments has no significant impact on customer patronage of SMEs in the Federal Capital Territory, Abuja.

2. LITERATURE REVIEW

2.1 SMEs customer patronage

Customer patronage serves as a cornerstone for the sustainability and growth of small and medium enterprises (SMEs), particularly in challenging economic contexts like Nigeria's Federal Capital Territory (FCT), Abuja. It reflects consumers' consistent preference to engage with businesses due to satisfaction, trust, and perceived value. Anyadighibe et al. (2024) described customer patronage as the act of purchasing driven by satisfaction and service quality, laying the foundation for loyalty through repeated positive experiences.

Bagwell (2023) viewed it as repeated engagement fueled by effective marketing strategies that enhance visibility and trust. Similarly, Onehi and Sunday (2017) emphasized that patronage stems from customer satisfaction with product quality and packaging, fostering loyalty. Acee-Eke (2025) highlighted patronage buying motives, such as innovation, knowledge, and customer empathy, as key drivers of loyalty and retention during crises like pandemics. Totanan et al. (2021) further noted that motives like company reputation, strategic location, and pricing influence patronage, significantly impacting SME profitability.

In the context of a cashless policy in the FCT, Abuja, patronage is shaped by digital payment adoption. Atemoagbo et al. (2022) found that cashless payment systems positively impact SME financial performance, with high adoption clusters in Suleja showing a 25.6% profit margin increase due to enhanced transaction efficiency. However, challenges like poor internet connectivity and high transaction costs can hinder patronage (Monye, 2024). For example, SMEs adopting mobile apps and POS systems in Abuja attract tech-savvy customers, boosting loyalty, while inadequate infrastructure limits broader engagement.

2.2 Cashless policy

Cashless policy refers to financial system that promotes electronic transactions over physical cash to enhance efficiency, security, and transparency in SME operations in Abuja. Alkali et al. (2025) described a cashless policy as a framework where payments for goods and services are executed and recorded electronically, reducing physical cash

circulation while fostering digital platforms, as supported by the Central Bank of Nigeria's initiatives. Kitamura (2022) clarified that a cashless policy does not eliminate cash entirely but minimizes its use, providing alternative electronic channels for payments to streamline economic exchanges. Similarly, Lawal and Okafor (2022) portrayed a cashless economy as one where electronic media dominate transactions, emphasizing convenience and efficiency over cash-based systems. Williams (2023) further explained that in a cashless economy, reliance on physical cash becomes negligible, with payments facilitated through digital tools like bank transfers or credit cards.

Umar et al. (2023) noted that developed economies have increasingly adopted electronic payment instruments, highlighting their role in reducing transaction costs and risks. For SMEs in Abuja, adopting cashless methods like online banking and QR code payments can enhance operational efficiency, as digital transactions reduce cash-handling risks and improve record-keeping (Ogbeide & Fapohunda, 2017). However, challenges such as unreliable internet, high transaction fees, and low digital literacy, as highlighted by Uruakpa (2023), can impede adoption. Schomburgk et al. (2024) added that cashless transactions encourage higher spending due to reduced psychological barriers, potentially boosting SME patronage. Despite these benefits, systemic issues like network failures and security concerns, as noted by Nwani et al. (2020), require robust infrastructure to ensure success.

2.3 Online banking

Online banking, as described by Roberte (2025), involves the remote execution of routine financial tasks such as checking balances, transferring money, and paying bills through secure internet connections. It enhances convenience and efficiency, allowing users to access services at any time. Roberte further explained that digital-only banks are becoming more appealing to users due to their cost efficiency and better interest rates, even though occasional physical banking may still be needed.

Pomroy (2023) explained online banking as a service that gives users digital access to almost all traditional bank offerings. It permits bill payments, balance monitoring, deposits, and fund transfers through secure platforms. Pomroy added that although online banking allows flexibility and ease of access, it sometimes limits physical services like face-to-face customer assistance or cash-based transactions, particularly with banks that operate solely online. Similarly, Singh (2023) outlined that online banking enhances financial management for users by offering tools for budgeting, scheduled payments, and real-time monitoring. Singh emphasized that while there are benefits like cost reduction and operational ease, risks such as cybersecurity threats and technical challenges must be managed. The author noted that banks counter these concerns through features like encryption and two-factor authentication.

Relating specifically to SMEs, Okonkwo (2022) observed that online banking improves access to financial products like credit and loans. These resources help SMEs maintain operations, expand inventory, or pursue growth opportunities. The availability of financing through digital banking platforms can influence business performance

positively by enhancing liquidity and reducing dependence on traditional banking systems. Ghose and Maji (2022) supported this view, stating that online banking reduces the overhead costs tied to physical banking infrastructure and simplifies financial processes, thereby supporting profitability. Rabiou et al. (2019) pointed out that online banking supports SMEs with tools such as automated payments, electronic invoicing, and built-in fraud detection, helping to secure financial operations and enhance trust. This financial control improves business planning and performance stability.

2.4 QR code payment

QR code payment refers to a digital payment method that enables customers to complete transactions by scanning a Quick Response (QR) code using a smartphone. This method allows merchants, including Small and Medium Enterprises (SMEs) in the Federal Capital Territory, Abuja, to accept payments without physical cash or card machines, promoting seamless, contactless, and accessible financial transactions. This payment solution is particularly useful for small businesses aiming to reduce operational barriers and reach wider customer bases in a growing cashless economy.

Gundaniya (2024) explained QR code payments as tools for instant transactions, emphasizing their simplicity, affordability, and compatibility with digital wallets. Similarly, Peratello (2023) described QR code payment as a method that connects the user's mobile phone to a payment gateway via code scanning, thus offering convenience and security. According to De Luna et al. (2019), Liu et al. (2021), and Lou et al. (2017), QR code payment systems involve mobile devices interacting with QR technologies to make payments for goods and services, thereby fostering mobile commerce in various contexts.

Gao et al. (2018) and Lorenzi et al. (2014) noted that QR codes, often termed mobile barcodes, are easily scanned by mobile applications, offering businesses and consumers fast digital interactions. As stated by Ledi et al. (2023), QR codes are more advanced than traditional barcodes and are now widely integrated into mobile money systems that support SME performance. These definitions collectively suggest that QR code payment is not just a tool but a system enabling quick, encrypted, and paperless monetary transactions across industries.

Manan et al. (2023) noted that during the COVID-19 pandemic, QR codes played a role in keeping businesses operational without face-to-face interactions. Bhattacharya and Singla (2024) discussed how QR code innovation has transformed banking by simplifying customer interaction and enhancing transaction security through encryption. Meanwhile, Petrova et al. (2016) acknowledged both the convenience and potential risks of QR systems, particularly in the areas of data misuse and cybersecurity.

Research from Beck et al. (2022) highlighted how QR code systems help small firms improve their financial access and track sales digitally. Similarly, studies by Adhikari (2024) and Sehat et al. (2024) explained that behavioral intentions to adopt QR payments are influenced by factors like trust, ease of use, and perceived usefulness. Empirical findings from Rosyidiana et al. (2025), Wardhani et al. (2023), and Ledi et al.

(2023) have demonstrated that QR code adoption directly correlates with improved patronage, cash flow, and financial documentation among SMEs. These outcomes suggest that QR code payment enhances operational efficiency, especially for businesses transitioning to cashless systems. However, limitations exist. Shekhar (2023) reported that low trust and high perceived risk may discourage adoption among SME owners, while Hillary et al. (2024) pointed out that barriers such as risk perception and technological unfamiliarity can limit QR code acceptance. Still, the prevailing evidence supports the value of QR technology in driving digital financial inclusion and strengthening SME performance in a cashless policy environment.

3. EMPIRICAL REVIEW

3.1 Online banking and customer patronage

Iyke-Ofoedu et al. (2022) examined the effect of internet banking on the performance of small and medium enterprises in Enugu metropolis. The study determined the effect of internet effectiveness on business expansion, and internet convenience on quality of job delivery among SMEs. Using a descriptive survey design, the research targeted a population of 650 SME operators and selected a sample size of 264. Data were collected through structured questionnaires and analyzed using t-statistics. The findings revealed that internet effectiveness significantly influenced business expansion, as indicated by a t-statistic of 38.887 and a p-value of 0.000. Similarly, internet convenience had a significant impact on the quality of job delivery, shown by a t-statistic of 33.446 and p-value of 0.000. Furthermore, internet accessibility was found to significantly affect income base expansion, evidenced by a t-statistic of 51.826 and p-value of 0.000. The study recommended periodic internet banking training for SME operators to enhance their usage and maximize associated benefits. However, the study lacked qualitative insights that could have enriched understanding of user experiences and omitted discussion on infrastructural or digital literacy barriers, which are critical in developing economies.

Obunga et al. (2021) analyzed the effect of online banking on the performance of small and medium enterprises in Kisumu County. The study focused specifically on how communicational online banking influenced SME performance. Using a descriptive research design, the study targeted a population of 332 SMEs and selected a sample size of 57 through stratified random sampling based on the Yamane model. Data were collected using structured questionnaires and analyzed using both descriptive and inferential statistics. The findings indicated that communicational online banking had a positive and statistically significant effect on SME performance, with a coefficient value of 0.361. This suggests that timely and effective information sharing via online banking channels contributed to improved decision-making and operational outcomes for SMEs. The study recommended that SMEs in Kisumu County adopt ICT and communicational online banking tools to enhance business performance. However, the study was limited by its narrow focus on only one aspect of online banking—communication—without

considering broader functionalities like payment systems or cybersecurity, which may also impact performance.

Okonkwo (2022) examined the impact of digital payment systems on small business growth in Anambra State. The study evaluated how mobile banking, point-of-sale (POS) terminals, and internet banking influenced the financial performance and customer outreach of SMEs. A descriptive survey design was adopted, and the study population comprised 250 registered SMEs operating within the commercial hubs of Onitsha and Awka. A sample size of 150 respondents was selected using stratified random sampling. Data were collected through structured questionnaires and analyzed using both descriptive statistics and multiple regression techniques. The findings indicated that mobile banking and POS usage significantly enhanced financial transactions' speed and accuracy, reduced operational costs, and improved customer satisfaction. It was recommended that SMEs adopt diverse digital payment platforms to improve service delivery, customer retention, and operational efficiency. However, the study lacked a detailed account of infrastructural and literacy challenges that could hinder the adoption of digital tools among micro-enterprises, limiting its generalizability to all categories of SMEs.

3.2 QR Code payment and customer patronage

Ledi et al. (2023) examined the effect of QR code and mobile money on performance of SMEs in developing countries the role of dynamic capabilities. The study investigated the extent to which QR code payments and mobile money usage influenced the performance of SMEs, while also assessing the moderating role of dynamic capabilities. A survey research design was employed, and data were collected through structured questionnaires from a target population of SMEs actively utilizing digital financial services in their operations. The sample size comprised 206 SMEs. Data analysis was conducted using statistical tools to assess both the direct and moderating effects of the variables. The findings revealed that mobile money and QR code payments had a significant and positive influence on SME performance. Furthermore, dynamic capabilities were also found to have a statistically significant effect on performance, with moderation being significant for mobile money but not for QR code payments. The study recommended increased adoption of digital financial services and enhanced dynamic capabilities to improve business resilience. However, the study was limited by its relatively small sample size and did not account for industry-specific differences among SMEs, which may affect generalizability across sectors and regions.

Wardhani et al. (2023) analyzed the impact of quick response adoption of payment code on MSMEs' financial performance in Indonesia. The study examined how adopting the Quick Response Code Indonesian Standard (QRIS) influences financial performance, while also identifying key factors affecting adoption among micro enterprises. A total of 296 micro business owners, both users and non-users of QRIS across Indonesia, participated in the study. Data were collected through online questionnaires and analyzed

using the Structural Equation Modeling (SEM) approach. The study found that the intention to adopt QRIS had a significant positive impact on financial performance, including improvements in transaction volume, turnover, cash flow, and sales documentation. Additionally, perceived convenience, social influence, perceived usefulness, and perceived cost were significant drivers of adoption. However, factors such as perceived compatibility, trust, personal innovativeness, length of time in business, and experience with digital payments did not show a significant effect on the intention to adopt QRIS. The study recommended promoting the benefits and usability of QRIS to increase adoption among micro businesses. However, the study focused only on micro businesses, limiting generalization to larger SMEs and lacked qualitative insights to deepen understanding of adoption barriers.

4. THEORETICAL FRAMEWORK

The theory underpinning this study is the Technology Acceptance Model (TAM), developed by Davis (1989), is the most suitable theory to explain the relationships in the study exploring the impact of online banking and QR code payments on SME customer patronage in the Federal Capital Territory, Abuja. TAM posits that perceived usefulness (the degree to which a technology is seen as beneficial) and perceived ease of use (the extent to which it is effortless to use) drive an individual's intention to adopt technology, influencing its actual use and subsequent outcomes. In this context, TAM suggests that SMEs' adoption of online banking and QR code payments depends on their perceptions of these technologies' utility and simplicity, which could affect customer patronage metrics like transaction volume and customer retention.

TAM's strength lies in its parsimony and proven applicability across diverse technology adoption scenarios, including digital payments (Venkatesh & Davis, 2000). However, critics argue it neglects external factors such as infrastructure, trust, or digital literacy, which are critical in developing economies (Bagozzi, 2007). Scholars like Wardhani et al. (2023) apply TAM to QR code adoption, linking perceived usefulness to financial outcomes, while Ledi et al. (2023) emphasized its relevance for SME digital payment systems. TAM provided a robust framework for understanding how SMEs' perceptions shape technology adoption, offering insights into potential barriers and facilitators in the Abuja context.

5. METHODOLOGY

To investigate the impact of cashless policy, specifically online banking and QR code payments, on the customer patronage of small and medium enterprises (SMEs) in the Federal Capital Territory, Abuja, this study adopts a survey research design. This approach facilitates the systematic collection of data from a large population to explore relationships between variables. The target population comprises 22,861 registered SMEs in the FCT, as documented by SMEDAN in 2021. Using the Taro Yamane (1967) formula, $n = \frac{N}{1+N(e)^2}$, where 'n' is the sample size, 'N' is the population size (22,861), and 'e' is the precision level (0.05), a sample size of 394 respondents was calculated. A simple random

sampling technique was employed to select owner/managers of these registered SMEs, ensuring each participant had an equal chance of inclusion to minimize bias.

Data were collected using a structured questionnaire tailored to the study's variables: online banking, QR code payments, and customer patronage. The questionnaire was adapted from established studies to ensure validity and relevance. For online banking, items were drawn from Iyke-Ofoedu et al. (2022), Obunga et al. (2021), and Singh (2023), focusing on aspects such as convenience, cost-effectiveness, and security. Questions related to QR code payments were adapted from Ledi et al. (2023) and Wardhani et al. (2023), emphasizing ease of use, security, and customer convenience. customer patronage indicators were derived from Matsoso and Benedict (2014), Salkić (2024), Schomburgk et al. (2024), and Alkali et al. (2025), capturing transaction volume, sales frequency, and customer retention. The reliability of the questionnaire was tested using Cronbach's alpha, yielding values of 0.871 for online banking, 0.913 for QR code payments, and 0.869 for customer patronage, indicating strong internal consistency and enhancing the instrument's reliability.

For data analysis, Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected as the primary analytical tool. PLS-SEM is ideal for this study due to its ability to handle complex models with multiple constructs and relationships, such as the interplay between online banking, QR code payments, and customer patronage. PLS-SEM allows for the simultaneous assessment of measurement and structural models, enabling the evaluation of how online banking and QR code payments influence transaction volume, sales frequency, and customer retention.

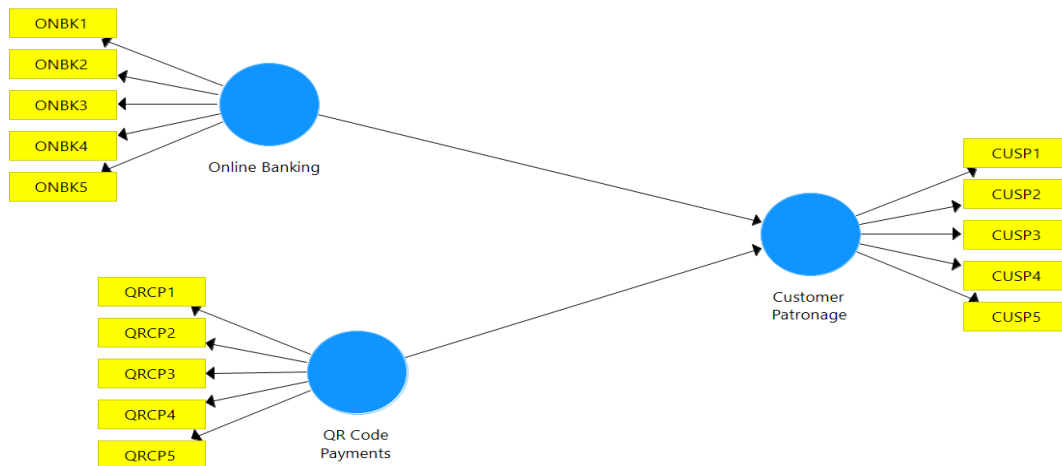


Figure 1: The Model of the Study
Source: SmartPLS Output, 2025.

the reliability and validity of the constructs. This ensured that the measurement items accurately represented online banking (ONBK), QR code payments (QRCP), and customer patronage of SMEs (CUSP). The second step focused on assessing the structural

model to test the hypotheses concerning the impact of cashless payment adoption, proxied by online banking and QR code payments, on the customer patronage of SMEs in the Federal Capital Territory (FCT), Abuja.

6. RESULT AND DISCUSSIONS

A total of 394 questionnaires were distributed, with 309 completed and returned, achieving a 78.4% response rate. To ensure a high response rate and data accuracy, trained research assistants administered the questionnaires in person, clarifying any ambiguities and encouraging complete responses. This hands-on approach minimized errors and enhanced the reliability of the collected data.

Assessment of measurement model

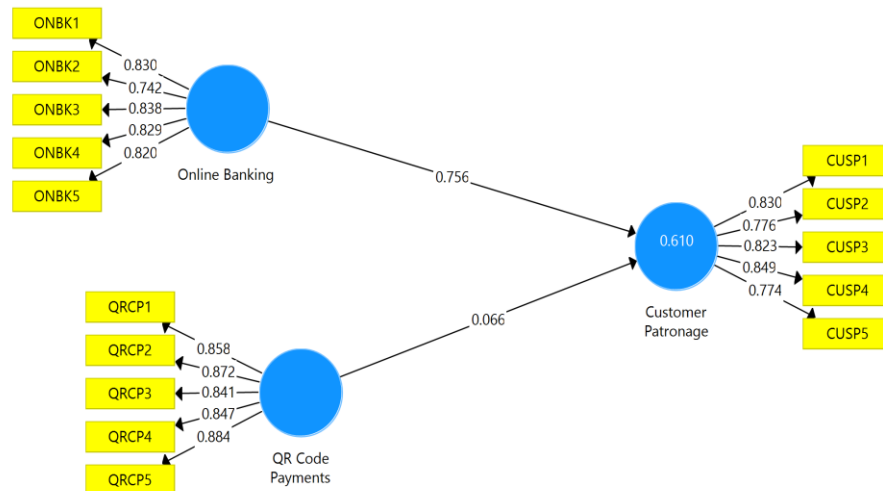


Figure 2: Measurement model of the study constructs and indicators.
Source: SmartPLS Output, 2025.

Table 1: Factor Loadings

Items	Online Banking	QR Code Payments	Customer Patronage
ONBK1	0.830		
ONBK2	0.742		
ONBK3	0.838		
ONBK4	0.829		
ONBK5	0.820		
QRCP1		0.858	
QRCP2		0.872	
QRCP3		0.841	
QRCP4		0.847	
QRCP5		0.884	
CUSP1			0.830
CUSP2			0.776
CUSP3			0.823
CUSP4			0.849
CUSP5			0.774

Source: SmartPLS Output, 2025

Table 1 presents the factor loadings for the variables used in this study, assessing the impact of cashless policy, specifically online banking and QR code payments, on the customer patronage of small and medium enterprises (SMEs) in the Federal Capital Territory, Abuja. Factor loading is a key indicator in structural equation modeling to evaluate the convergent validity of constructs, with a threshold of 0.70 or higher generally considered adequate (Hair et al., 2019). All items measuring online banking (ONBK), QR code payments (QRCP), and SME customer patronage (CUSP) in this study meet or exceed this threshold, confirming their suitability for further analysis.

For online banking (ONBK), factor loadings range from 0.742 to 0.838, indicating strong individual item reliability. Although ONBK2 recorded a loading of 0.742, it remains above the 0.70 cutoff, supporting its acceptability (Chin, 1998). These high loadings suggest that the items effectively capture the latent construct of online banking, aligning with Fornell and Larcker's (1981) assertion that robust factor loadings reflect accurate measurement of underlying constructs.

The QR code payments (QRCP) construct shows factor loadings between 0.841 and 0.884, demonstrating excellent item reliability and reinforcing the construct's validity. These results indicate that each item strongly contributes to measuring QR code payment adoption among SMEs, consistent with prior studies emphasizing the importance of high loadings for construct representation (Henseler et al., 2015).

For SME customer patronage (CUSP), factor loadings range from 0.774 to 0.849, confirming the construct's validity in capturing transaction volume, sales frequency, and customer retention. While CUSP2 and CUSP5 recorded slightly lower loadings (0.776 and 0.774, respectively), both exceed the 0.70 threshold, ensuring their suitability for the

model (Hair et al., 2019). The consistency of loadings across all constructs underscores their ability to contribute to the model's explanatory power.

These results demonstrate strong measurement validity for the constructs, adhering to best practices in Partial Least Squares Structural Equation Modeling (PLS-SEM). The high factor loadings confirm that online banking, QR code payments, and SME customer patronage are reliably measured, providing a solid foundation for hypothesis testing and structural model evaluation in this study.

Table 2: Construct Reliability and Validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Online Banking	0.871	0.877	0.907	0.660
QR Code Payments	0.913	0.927	0.934	0.741
Customer Patronage	0.869	0.870	0.905	0.657

Source: SmartPLS Output, 2025

Table 2 presents the results of construct reliability and validity for online banking, QR code payments, and SME customer patronage. Cronbach's alpha values range from 0.869 to 0.913, exceeding the 0.70 threshold recommended by Hair et al. (2019), indicating strong internal consistency across all constructs. The rho_A values, ranging from 0.870 to 0.927, further confirm reliable measurement. Composite reliability (CR) values, between 0.905 and 0.934, surpass the 0.70 benchmark, reinforcing construct reliability (Fornell & Larcker, 1981). The average variance extracted (AVE) values, from 0.657 to 0.741, exceed the 0.50 threshold, demonstrating adequate convergent validity (Henseler et al., 2015). These results confirm that the constructs used in this study are reliable and valid, providing a robust foundation for further analysis within the structural model.

Discriminant Validity

Table 3: Heterotrait-Monotrait Ratio (HTMT)

Construct	Online Banking	QR Payments	Code	SMEs Customer Patronage
Online Banking				
QR Code Payments	0.375			
Customer Patronage	0.890	0.355		

Source: SmartPLS Output, 2025.

Table 3 presents the Heterotrait-Monotrait Ratio (HTMT) results for assessing discriminant validity among the study constructs: online banking, QR code payments, and SME customer patronage. The HTMT values for most construct relationships are below the recommended threshold of 0.85 (Henseler et al., 2015), indicating that the constructs are generally distinct. Specifically, the HTMT value between online banking and QR code payments (0.375) and between

QR code payments and customer patronage of SMEs (0.355) are well below the threshold, confirming strong discriminant validity. However, the HTMT value between online banking and customer patronage of SMEs (0.890) slightly exceeds the 0.85 threshold, suggesting potential overlap but still within acceptable limits for exploratory studies (Henseler et al., 2015). These results indicate that online banking, QR code payments, and SME customer patronage largely measure distinct but related concepts, supporting the reliability of the model for further analysis.

The multicollinearity test for the study examining the impact of online banking and QR code payments on SME customer patronage in Abuja utilized Variance Inflation Factor (VIF) values to assess potential collinearity among constructs. The inner VIF values for online banking and QR code payments are 1.131, well below the threshold of 5, indicating no significant multicollinearity issues. This suggests that the independent variables are sufficiently distinct, ensuring reliable regression estimates. The R^2 value for customer patronage of SMEs is 0.610, with an adjusted R^2 of 0.608, reflecting a strong explanatory power of the model. Model fit indices further support the robustness of the analysis, with a Standardized Root Mean Square Residual (SRMR) of 0.054 for both saturated and estimated models, indicating a good fit as it is below the 0.08 threshold. The discrepancy measures ($d_ULS = 0.355$, $d_G = 0.161$) and Chi-Square value (425.205) are consistent across models, while the Normed Fit Index (NFI) of 0.901 suggests a well-fitting model. Predictive accuracy metrics show an RMSE of 0.642, MAE of 0.454, and $Q^2_predict$ of 0.602, confirming the model's predictive relevance for customer patronage. These results validate the structural model's integrity for further analysis.

Assessment of the Structural Model and Hypotheses Testing

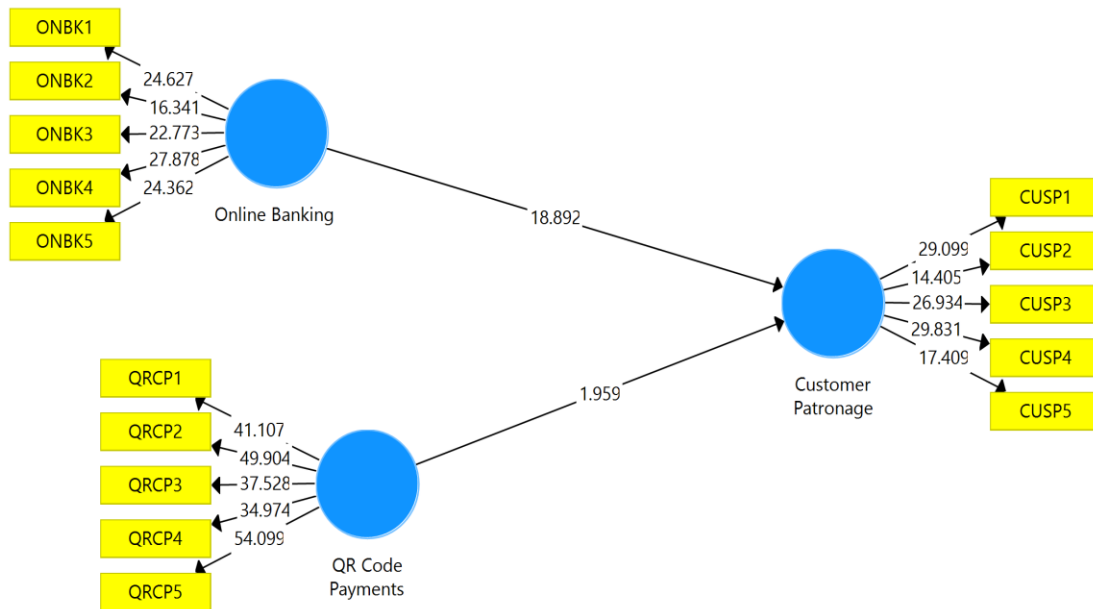


Figure 3: Measurement model of the study constructs and indicators.

Source: SmartPLS Output, 2025.

Table 4: Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
Online Banking -> CUSP	0.756	0.753	0.038	19.684	0.000	Rejected
QR Code Payments -> CUSP	0.066	0.072	0.034	1.960	0.051	Accepted

Source: SmartPLS Output, 2025

H₀₁: Online banking has no significant impact on Customer Patronage of SMEs in the Federal Capital Territory, Abuja.

The null hypothesis (H₀₁) stating that online banking has no significant impact on the customer patronage of SMEs in the Federal Capital Territory, Abuja, is rejected. The path coefficient of 0.756 and a p-value of 0.000 indicate a strong and statistically significant effect of online banking on SME customer patronage. This finding suggests that SMEs adopting online banking experience enhanced transaction efficiency, improved financial management, and increased access to financial services, all of which contribute to higher customer patronage. Online banking facilitates real-time payment processing, reducing transaction times and costs, which supports faster cash inflows and better liquidity management.

Additionally, it provides SMEs with access to credit facilities and other financial tools that enable business expansion and operational efficiency. These results align with prior studies, such as Iyke-Ofoedu et al. (2022), which found that internet banking significantly influences business expansion and job delivery quality in SMEs. Similarly, Obunga et al. (2021) reported a positive effect of communicational online banking on SME performance, while Adamu et al. (2024) confirmed a significant relationship between electronic banking and SME outcomes in Bauchi State. These findings underscore online banking's role in enhancing transaction volume, sales frequency, and customer retention, as supported by Okonkwo (2022), which highlighted improved financial transaction speed and customer satisfaction.

H₀₂: QR Code Payments has no significant impact on customer patronage of SMEs in the Federal Capital Territory, Abuja.

The null hypothesis (H₀₂) stating that QR code payments have no significant impact on the customer patronage of SMEs in the Federal Capital Territory, Abuja, is accepted. The path coefficient of 0.066 and a p-value of 0.051, which slightly exceeds the 0.05 significance threshold, indicate that the effect of QR code payments on SME customer

patronage is not statistically significant. This suggests that, in the context of this study, QR code payments do not have a substantial impact on transaction volume, sales frequency, or customer retention for SMEs in Abuja. The weak effect may be attributed to barriers such as low trust, security concerns, or limited adoption due to infrastructural challenges, as noted by Shekhar (2023), who highlighted trust and security as critical barriers to QR code adoption in Bihar. This finding contrasts with Ledi et al. (2023), who found a significant positive influence of QR code payments on SME performance in developing countries, and Wardhani et al. (2023), who reported that QRIS adoption improved transaction volume and financial performance in Indonesian MSMEs. The lack of significance in this study may reflect context-specific challenges, such as limited digital literacy or unreliable internet connectivity in Abuja, which could hinder the effective use of QR code payments.

7. CONCLUSION AND RECOMMENDATIONS

This study investigated the impact of online banking and QR code payments on the customer patronage of small and medium enterprises (SMEs) in the Federal Capital Territory, Abuja. The findings revealed a stark contrast in the influence of the two cashless payment methods. Online banking exhibited a strong and statistically significant impact on SME customer patronage (path coefficient = 0.756, $p = 0.000$), underscoring its critical role in enhancing transaction efficiency, financial management, and access to financial services.

Based on these findings, the following recommendations are proposed:

- i. Financial institutions should enhance online banking platforms with SME-tailored features, such as automated invoicing, integrated accounting tools, and instant loan approvals, to streamline financial operations and boost customer patronage. Offering training programs on leveraging these tools can further empower SMEs to optimize transaction volume and customer retention.
- ii. To address the limited impact of QR code payments, the government and fintech companies should launch awareness campaigns to build trust and improve digital literacy among SMEs and customers. Providing subsidies for QR code infrastructure, ensuring reliable internet connectivity, and implementing robust security measures can encourage adoption, enhancing transaction efficiency and sales growth.

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