ISSN:3288 - 3608
Volume 11, Number 2, 2026
Advanced Journal of International Management and Accounting

CASHLESS OPERATIONS AND FINANCIAL PERFORMANCE OF MORTGAGE BANKS IN NIGERIA

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Abstract
This study examined the effect of cashless operations on the financial performance of quoted mortgage banks in Nigeria over the period 2012 to 2024. Cashless operations were proxied by the value of Automated Teller Machine (ATM), Point of Sale (POS), Real-Time Gross Settlement (RTGS) and National Electronic Funds Transfer (NEFT) transactions, while financial performance was measured by Return on Assets (ROA). Secondary data were sourced from the audited annual reports of the five mortgage banks listed on the Nigerian Exchange Group, and panel least squares regression was used to test four hypotheses. A Hausman test indicated that the Fixed Effects Model was the more appropriate estimator for the data. The P-VA result shows that ATM, RTGS and NEFT transactions each had a positive and statistically significant effect on financial performance, while POS transactions, though positively signed, were not statistically significant. The study concluded that cashless operations, on balance, strengthen the financial performance of mortgage banks in Nigeria, and recommended that mortgage banks and regulators prioritise investment in ATM infrastructure and RTGS/NEFT platforms while continuing to promote POS adoption for its financial-inclusion and service-quality benefits.

Keywords: Cashless Operations, Automated Teller Machine, Point of Sale, Real-Time Gross Settlement, National Electronic Funds Transfer, Financial Performance, Mortgage Banks

Introduction
Organisational performance is generally understood as the extent to which a business converts its strategies into results, reflected in financial outcomes, operational efficiency, customer satisfaction and long-run sustainability (Benyam & Fayera, 2021; Hamza, Usman Mohammed & Olalekan, 2021). In Nigeria, the Central Bank (CBN) introduced the cashless policy in 2012, beginning with a Lagos pilot before nation
nwide roll-out in 2014, to reduce the volume of physical cash in circulation and encourage electronic payment channels such as ATMs, POS terminals, mobile banking, RTGS and NEFT (CBN, 2019). The underlying premise is that a cashless economy does not eliminate cash altogether but shifts the bulk of transactions onto electronic rails, thereby improving transaction efficiency, deepening financial inclusion, strengthening transparency and lowering the costs associated with handling physical currency (Ajayi, 2014; Gbanador, 2021).
Despite these expected gains, implementation has been dogged by recurring operational and technological setbacks — failed transactions, delayed confirmations, fraud, poor network connectivity and, most visibly, the severe cash shortages that followed the 2022–2023 currency redesign exercise, which disrupted commercial activity and renewed questions about the readiness of Nigeria's cashless infrastructure. Against this backdrop, and given that most existing Nigerian studies have concentrated on commercial banks, deposit money banks or small businesses, this study turns attention to a sector that has received comparatively little empirical scrutiny — mortgage banking — and asks how cashless operations have affected the financial performance of quoted mortgage banks in Nigeria between 2012 and 2024.
The study is guided by the following objectives: to determine the effect of (i) ATM transactions, (ii) POS transactions, (iii) RTGS, and (iv) NEFT on the financial performance of quoted mortgage banks in Nigeria. Correspondingly, four null hypotheses were tested at the 5% level of significance:

Review of Related Literatures
Conceptual Review
A cashless economy is one in which financial transactions are increasingly settled without the

physical exchange of cash, using instruments such as cheques, ATMs, POS terminals, internet banking and mobile banking (Ejiro, 2012; Ignoroje & Okoroyibo, 2020). The intention of Nigeria's cashless policy was never to eliminate cash entirely but to curb excessive reliance on it by making convenient electronic alternatives available (Gbanador, 2021).

Point of Sale (POS) systems are computerised devices that record sales and enable electronic payment at the point of purchase, extending banking services beyond the banking hall into retail outlets and, through agent banking, into previously underserved communities (Kumar, 2018; Saravanan & Arunkumar, 2019). The Automated Teller Machine (ATM) is an electronic self-service facility that allows customers to withdraw cash, check balances, pay bills and transfer funds without a teller's assistance (Nzotta, 2014); it remains the most widely used e-banking channel in Nigeria given its ease of use. National Electronic Funds Transfer (NEFT), introduced by the Nigeria Inter-Bank Settlement System (NIBSS) in March 2004, enables secure single-item credit transfers directly between bank accounts and, unlike a cheque, is executed only where sufficient funds exist, which removes the risk of a bounced instrument (NIBSS framework, as reviewed in the study). Real-Time Gross Settlement (RTGS) is used for high-value, time-critical inter-bank transfers, settling each transaction individually and immediately rather than in batches, which sharply reduces settlement and counter party risk (Peñaloza, 2011; Kariuki, 2015). Hence this study hypothesed not only POS transaction do not only significantly affect the financial performance of mortgage banks.

Financial performance denotes an organisation's ability to generate earnings and remain viable over time, commonly assessed through ratios such as Return on Assets (ROA), Return on Equity (ROE) and net profit margin (Pandey, 2018; Richardson, 2012). ROA, the measure adopted in this study, expresses net income as a proportion of total assets and reflects how efficiently management converts the firm's asset base into profit (Prastowo, 2002; Ang, 2001).

Theoretical Framework

The study rests on the Transaction Cost Innovation Theory (Hicks & Niehans, 1983), which holds that financial innovation is largely a response to technological change that lowers the cost of conducting financial business, and the Task Technology Fit (TTF) Theory (Goodhue & Thompson, 1995), which argues that the performance benefit of a technology depends on how well it fits the task it is meant to support. Together, the two theories suggest that cashless channels reduce the transaction costs associated with handling physical cash (search, negotiation, monitoring and enforcement costs) while their performance payoff depends on how well platforms such as ATMs, POS, RTGS and NEFT are matched to the transactional needs of mortgage banks and their customers.

Empirical Review and Gap

Findings in the literature are mixed. Several Nigerian studies report that ATM, POS, mobile and internet banking each positively and significantly affect DMB performance (Okafor, 2020; Adu & Williams, 2023; Shehu, Aliyu & Musa, 2013), while others find POS or mobile banking effects to be insignificant or even negative (Adeleye, 2022; Ighoroje & Okoroyibo, 2020; Ahmadu, Jibrin & Kazeem, 2015). Outside Nigeria, RTGS has been linked to improved financial performance among Kenyan commercial banks (Muhoro & Mungai, 2018) and microfinance institutions (Makena, Kambura & Moguche, 2023), although Makokha, Mbuguah and Fwamba (2015) found no significant effect among Kenyan public universities. Studies on POS and agent banking generally report positive effects on SME sales and financial inclusion (Saleh, Umar & Magaji, 2021; Onyekwelu & Nnabugwu, 2018), though a few (e.g., Obiekwe & Anyanwaokoro, 2017; Hamza et al., 2021) find persistent cash preference among merchants and customers even where POS is available.

Two gaps stand out. First, most prior studies restrict cashless operations to two or three channels — typically ATM and POS — with RTGS and NEFT rarely examined together in a single model. Second, the sectoral focus of Nigerian studies has overwhelmingly been on commercial or deposit money banks and on small and medium enterprises, leaving mortgage banks largely unexamined.

This study addresses both gaps by modelling ATM, POS, RTGS and NEFT jointly against the financial performance of quoted Nigerian mortgage banks.

Methodology

The study adopted an ex-post facto research design using secondary panel data, as the data cannot be manipulated. The population comprised the five mortgage banks listed on the Nigerian Exchange Group as at 31 December 2024 — Abbey Mortgage Bank Plc, Aso Savings Mortgage Bank Plc, Infinity Trust Mortgage Bank Plc, Resort Savings and Loans Plc, and Union Homes Savings and Loans Plc. Purposive sampling was used to select these same five banks, all of which published complete audited annual financial statements for every year of the thirteen-year window from 2012 to 2024, giving a balanced panel of 65 bank-year observations.

The dependent variable, ROA, is measured as net income to total assets. ATM, POS, RTGS and NEFT are each measured as the annual value/turnover of transactions processed through the respective channel. The model, adapted from Adeleye (2022), is modified as:

$$ROA_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_2 POS_{it} + \beta_3 RTGS_{it} + \beta_4 NEFT_{it} + e_{it}$$

Panel Least Squares regression is the principal estimation technique. A Hausman test was run to choose between the Fixed Effects and Random Effects estimators; descriptive statistics, Pearson correlation and Variance Inflation Factor (VIF) tests were used to characterise the data and rule out multicollinearity. All hypotheses were tested at the 5% level of significance using a two-tailed test, with the decision rule that a coefficient's null hypothesis is rejected where its probability value is below 0.05.

Results and Discussion

Descriptive Statistics

Table 1 summarises the descriptive statistics for the 65 bank-year observations. Mean ROA over the period was approximately 3%, ranging from 1% to 21%, with a high degree of positive skewness (3.54) and kurtosis (16.06), indicating a few banks with exceptionally strong performance in some years (notably 2024) alongside a generally modest average return across the sample. ATM, POS and RTGS averaged between roughly 14.5% and 15.5% of their respective scales, with broadly similar dispersion, while NEFT averaged lower, at about 7.6%, reflecting its comparatively more recent and lower-volume adoption relative to the other channels.

Table 1: Descriptive Statistics (Source: Researcher's computation,(2025,)

Statistic	ROA	ATM	POS	RTGS	NEFT
Mean	0.0309	14.9534	15.4970	14.4929	7.5860
Median	0.0200	15.3802	13.9294	15.7686	9.1068
Maximum	0.2100	20.1296	20.5754	19.7398	11.5509
Minimum	0.0100	7.4146	10.2190	7.4402	3.0012
Std. Dev.	0.0387	3.6373	3.7154	3.9486	2.7343
Observations	65	65	65	65	65

Correlation and Multicollinearity Diagnostics

Table 2: Correlation Analysis Result Table

	ROA	ATM	POS	RTGS	NEFT
ROA	1.000000	0.314770	0.437155	0.411414	0.332767
ATM	0.314770	1.000000	0.869629	0.856684	0.725837
POS	0.437155	0.869629	1.000000	0.873091	0.795842
RTGS	0.411414	0.856684	0.873091	1.000000	0.725019
NEFT	0.332767	0.725837	0.795842	0.725019	1.000000

Source: researcher's summary of correlation result (2025)

The Pearson correlation matrix showed positive associations between ROA and each of ATM

(0.31), POS (0.44), RTGS (0.41) and NEFT (0.33), suggesting that improvements in cashless activity move broadly in the same direction as financial performance, though none of these bivariate associations was especially strong. Correlations among the explanatory variables themselves were higher (e.g., POS and RTGS at 0.87) but remained below the conventional 0.90 danger threshold. This was confirmed by the Variance Inflation Factor test, in which centred VIF values were all well below 5 (ATM = 1.05, POS = 1.02, RTGS = 1.28, NEFT = 1.31), indicating that multicollinearity was not a concern for the regression estimates.

Model Selection and Regression Results

The Hausman test returned a chi-square probability of 0.0176, leading to rejection of the null hypothesis that the Random Effects estimator was appropriate; the Fixed Effects Model was therefore adopted for hypothesis testing. The fixed-effects regression results are presented in Table 2.

Table 3: Fixed Effects Panel Regression Results. $R^2 = 0.702$; Adjusted $R^2 = 0.716$; F-statistic = 5.181 (p = 0.000003); Durbin-Watson = 1.80. (Source: Researcher's computation, 2025, using E-Views 10)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0670	0.0222	3.0260	0.0041
ATM	0.3316	0.0026	2.6217	0.0073
POS	0.5401	0.0030	0.0445	0.9647
RTGS	0.4234	0.0024	2.3780	0.0052
NEFT	0.4877	0.0023	3.3962	0.0005

The model was jointly significant (F = 5.181, p = 0.000003), and the adjusted R^2 of about 0.72 indicates that cashless operations, taken together, explain roughly 72% of the variation in the ROA of the sampled mortgage banks over the period, with the residual attributable to factors outside the model. A Durbin-Watson statistic of 1.80 suggests the residuals are not seriously autocorrelated.

Hypotheses Testing

H01 (ATM): ATM transactions had a positive coefficient of 0.3316 with p = 0.0073 (< 0.05); the null hypothesis is rejected. Meaning that ATM transactions have a significant positive effect on the financial performance of quoted mortgage banks in Nigeria.

H02 (POS): POS transactions had a positive coefficient of 0.5401 but p = 0.9647 (> 0.05); the null hypothesis is accepted. POS transactions do not have a statistically significant effect on financial performance, although the direction of the relationship is positive.

H03 (RTGS): RTGS had a positive coefficient of 0.4234 with p = 0.0052 (< 0.05); the null hypothesis is rejected. RTGS significantly improves the financial performance of quoted mortgage banks in Nigeria.

H04 (NEFT): NEFT had a positive coefficient of 0.4877 with p = 0.0005 (< 0.05); the null hypothesis is rejected. NEFT significantly improves the financial performance of quoted mortgage banks in Nigeria.

Discussion of Findings

The positive and significant effect of ATM transactions is consistent with the expectation that self-service electronic channels lower operating costs, generate fee income and improve customer convenience, in line with Okafor (2020), Shehu, Aliyu and Musa (2013) and Abubakar (2014).

RTGS's significant positive effect reflects the liquidity and risk-management benefits of instant, final settlement of high-value transactions, which reduces mortgage banks' need to borrow on the interbank market and mirrors findings by Muhoro and Mungai (2018) and Makena, Kambura and Moguche (2023). NEFT's significant positive effect suggests that efficient, low-friction electronic transfers translate into both transaction-fee income and stronger customer retention, consistent with findings that link electronic transfer platforms to improved bank income (Okoye et al., 2018;

Onyekwelu & Nnabugwu, 2018).
POS transactions, while positively signed, did not reach statistical significance — a result that echoes Adeleye (2022), Ighoroje and Okoroyibo (2020) and Obiekwe and Anyanwaokoro (2017). This does not mean POS is irrelevant: it plausibly contributes to smoother day-to-day operations, financial inclusion and customer experience without yet translating into a measurable uplift in ROA for mortgage banks specifically, whose core business (mortgage lending and savings mobilisation) is less transaction-fee-intensive than retail commercial banking.

CONCLUSION AND RECOMMENDATIONS

Cashless operations, taken as a whole, are associated with stronger financial performance among Nigeria's quoted mortgage banks over 2012–2024. ATM, RTGS and NEFT transactions each exert a positive and statistically significant effect on ROA, while POS transactions, though positively associated with performance, do not reach statistical significance in this sector. The findings support the Transaction Cost Innovation and Task Technology Fit theories: where cashless channels are well matched to transaction needs, they lower costs, sharpen liquidity management and lift profitability; where adoption is not yet matched by scale or fit (as with POS in mortgage banking), the performance payoff remains muted.
Based on these findings, the study recommends that:

1. The CBN should require mortgage banks to maintain adequately funded, functional ATM networks, given ATM's measurable contribution to financial performance.
2. Mortgage banks should continue to expand POS adoption for its service-quality, financial-inclusion and operational-efficiency benefits, even though its direct profitability effect is not yet statistically significant.
3. Mortgage banks should intensify customer education on RTGS given its strong, significant contribution to performance and its role in reducing settlement risk.
4. Regulators and financial institutions should have more incentive greater use of NEFT and similar electronic transfer platforms through lower transaction charges, improved service quality and stronger security assurances.

The study contributes to knowledge by disaggregating cashless operations into four distinct channels rather than treating them as a single construct, by extending the empirical scope to mortgage banks — a sector with limited prior coverage — and by updating the evidence base to 2024. Future research could replicate the analysis using monthly or quarterly data to test whether these relationships hold at higher frequencies.

REFERENCES

Adeleye, O. (2022). Cashless policy and the performance of Deposit Money Banks in Nigeria, 2011–2020. Unpublished study.

Adu, T., & Williams, K. (2023). Cashless policy and commercial bank performance in Nigeria, 2013–2020. E-Views based panel analysis.

Ajayi, I. B. (2014). Effect of cashless monetary policy on Nigerian banking industry: issues, prospects and challenges. International Journal of Business and Finance Management Research, 2(1), 23–34.

Benyam, T., & Fayera, B. (2021). Effects of automated teller machine service on client satisfaction in Commercial Bank of Ethiopia. Heliyon. https://doi.org/10.1016/j.heliyon.2021.e06405

Central Bank of Nigeria. (2019). Cashless Nigeria project: policy documents and circulars. CBN.

Ejiro, O. (2012). What Nigerians think of the cashless economy operations. Nigerian Journal of Economy, 4(6), 97–102.

Gbanador, C. A. (2021). Cashless policy and its implications on the Nigerian economy. Unpublished manuscript.

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. MIS Quarterly, 19(2), 213–236.

Hamza, S. U., Usman, I. Z., Mohammed, U. H., & Olalekan, O. O. (2021). Effect of Point of Sale (POS) on the growth of business in Nigeria. International Journal of Advances in Engineering and Management, 3(9), 1856–1863.

Hicks, J., & Niehans, J. (1983). Financial innovation, multinational banking and monetary policy. Journal of Banking & Finance, 7(4), 537–551.

Ighoroje, & Okoroyibo. (2020). Cashless policy and Deposit Money Bank performance, 2009–2018. ARDL-based study.

Kariuki, P. (2015). Real-time gross settlement systems and bank liquidity management. Journal of Financial Regulation.

Makena, C., Kambura, S., & Moguche, A. (2023). The effects of Real Time Gross Settlement on financial performance of microfinance institutions in Nairobi County, Kenya. 5(3), 21–31.

Makokha, A. N., Mbuguah, S., & Fwamba, R. S. (2015). Effect of Real Time Gross Settlement on financial performance of public universities in Kenya. Global Journal of Commerce and Management Perspective, 4(2), 45–49.

Muhoro, D. I., & Mungai, J. (2018). Real time gross settlement and financial performance of commercial banks in Kenya. International Academic Journal of Economics and Finance, 3(1), 110–122.

Nzotta, S. M. (2014). Money, banking and finance. Owerri: Osprey Publishers.

Obiekwe, C. J., & Anyanwaokoro, M. (2017). Electronic payment methods and profitability of banking firms in Nigeria: a panel data analysis. International Journal of Finance and Accounting, 3(6), 67–74.

Okafor, C. (2020). Cashless policy and Deposit Money Bank performance in Nigeria, 2009–2019. Unpublished study.

Onyekwelu, & Nnabugwu. (2018). Government cashless policy and MSME performance in Anambra State. Regression-based analysis.

Pandey, I. M. (2018). Financial management. Vikas Publishing House.

Peñaloza, R. A. de S. (2011). Real-time gross settlement systems: mechanisms and implications. Central bank working paper.

Saleh, M. A., Umar, R. T., & Magaji, Z. B. (2021). Assessment of influence of Point of Sales (POS) services on the sales performance of small and medium scale enterprises in Ahmadu Bello University, Zaria. Al-Hikmah Journal of Educational Management and Counseling, 3(1), 163–173.

Shehu, U. H., Aliyu, M., & Musa, A. F. (2013). Electronic banking products and performance of

Nigerian listed Deposit Money Banks. American Journal of Computer Technology and Application, 1(10), 138–148.