A Literature Review on the Challenges of the Use of Point of Sale (POS) Terminals in the Nigerian Banking System

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Abstract: This research paper examined the challenges facing the use of Point of Sale (POS) Terminals in the Nigerian Banking System. The researchers adopted exploratory research design whereby secondary data were sourced from already published journal articles. Thematic approach was deployed in presenting the research findings. The study found that POS services help banks keep and enhance the loyalty of their obtainable customers, provide opportunity to the banks to increase market share and increase customer satisfaction. Among the factors identified as responsible for the low adoption of POS terminals in Nigeria are exorbitant transaction charges, lack of adequate infrastructure required to run POS, irregular network connectivity which erodes the trust of the users, and security of network communications. The study recommends that the charges and fees on the use of POS terminals should be considerably lessened in order to avoid discouraging banked and unbanked population from using such channel to access the services of the banking cubicle.

Keywords: Point of Sale (POS) Terminals, Nigerian Banking System, Adoption of POS

1.0 Conceptual Review
1.1. Point of Sale (POS) Terminals
The term "Point of Sale (POS)" or "Point of Purchase (POP)" refers to the location and time where a retail transaction is completed (Okeke, Nwatu & Ezeh, 2017). The POS terminal is also known as a POP terminal and is used for instant payment of goods and services, as it is user-friendly, easy to operate, and has multi-functional capabilities (Mohammed, Ibrahim & Muritala, 2022). POS terminals allow customers to access their linked bank accounts in real-time through debit or credit cards (Iwedi, 2017). They are considered by Awoniyi (2022) as a virtual replacement for cash transactions. The terminal keeps a record of customer purchases and deposit transactions, allowing customers to check their balance, pay for items, and perform funds transfer transactions without the need for physical cash (Ikpefan, Akpan, Godswill, Evbuomwan, Ndigwe, 2018). In other words, the POS terminal facilitates virtual movement of funds to support merchants in monitoring their customers' transactions (Adebayo, Osanyinlusi, Adekeye, 2017). A POS terminal is a device deployed in a merchant location that allows users to swipe their electronic cards to make payments instead of using physical cash (Williams, Olalekan & Timothy, 2018). The adoption of POS terminals has significantly reduced the volume of cash-based transactions, as such adoption of POS technology allows cardholders to make payments at sales or purchase outlets without the need for physical cash (Osang, 2017). The terminal offers many advantages, including ease of payments, convenience, and security (Morufu, 2016).

Customers who use POS terminals are pre-issued with electronic cards called electronic purses (Okonkwo & Ekwueme, 2022). These cards can be inserted into the electronic equipment to make payments. POS terminals function similarly to ATMs (Anyanwu & Anumaka, 2020). When a transaction is completed, the amount is entered into the POS terminal, and the equivalent cash amount is automatically transferred from the payer's account to the payee's account (Ozoji, Iwara, Ezuwore-Obodoekwe, Inyada, Ezechukwu, Ayem-Fella, Ezuma, Ebisi & Okoroiwu, 2021). Merchants use the POS terminal as a digital device for customers to make payments, check their balance, and perform electronic fund transfers by inserting their smart card into the device and entering their PIN (Ozoji, Iwara, Ezuwore-Obodoekwe, Inyada, Ezechukwu, Ayem-Fella, Ezuma, Ebisi & Okoroiwu, 2021).

1.2 Banking System
According to Mohammed, Ibrahim, and Muritala (2022), the banking system refers to the financial intermediation provided worldwide as a means of facilitating payment and receipt of money. The banking system is combined with payment system technology to primarily enhance commerce and trade. The rapid increase in the use of the internet and the adoption of POS system technology has led to a drastic change in banking practices globally (Kamboh & Leghari, 2016). Bingilar and Bariweni (2019) define the banking system as the arrangement that comprises institutions, establishments, instruments, rules, standards, procedures, and technical processes that make fund transfer between different parties possible and ensure that agreed obligations are met. An efficient banking system reduces transaction costs and is essential for the effective operation of third-party transfers, interbank and security payments. Instability in the banking system, however, leads to the wasteful use of economic resources, unbalanced risk-sharing among agents, and a loss of public confidence in the economy's banking system (Ezejiofor, Nwakoby, & Okoye, 2015).

To evaluate the performance of a banking system, it is important to assess whether it allows banks to achieve their objectives set by management and stockholders (Abaenewe, Ogbulu, & Ndugbu, 2013). Stock prices and behavior are typically used to reflect the performance of the banking system (Olaiya & Adeleke, 2019). Today's banking system is dynamic and undergoing quick changes as actors in the banking industry have been at the forefront of using technology to improve their products and services (Ugbede, Yahaya, & Edicha, 2019). The twenty-first-century banking system operates in a complicated and competitive environment defined by shifting conditions and a volatile economic climate (Okonkwo & Ekwueme, 2022). In response to technological advancements, increasing knowledge, and changing consumer expectations, the banking system now serves its customers electronically. The current banking system works with payment systems that have active linkages governed by laws, rules, and principles, providing the necessary functionality for monetary exchange via bank deposits.

1.3 Impact of Utilization of POS Terminal on the Nigerian Banking System

The widespread use of internet-based banking and shopping has led to a significant increase in the use of electronic payment systems and POS terminals over the past few decades (Madugba et al., 2021). As technology continues to advance, POS terminals serve as a secure and efficient means of processing e-payments, reducing the need for check and cash transactions (Nwankwo & Agbo, 2021). The adoption of POS services by the banking industry has been identified as a way to enhance customer satisfaction and loyalty, increase market share, and reduce operational and administrative costs (Alnaas, 2022; Hammouri et al., 2021; Kimiagari & Baei, 2021). According to a study by Adetayo, Mokuolu, and Fayomi (2021), customers use POS terminals for transactions such as withdrawals, transfers, and paying for utilities because of factors such as confidentiality, speed of transaction, friendly operators, competitive charges, and convenient location.

The utilization of POS terminals in banking transactions also helps to reduce congestion in banking halls and long queues at ATM terminals, leading to increased customer satisfaction in the banking sector (Nnamani & Makwe, 2019). The adoption of Point of Sale (POS) systems has brought numerous benefits to the financial sector of various nations. These benefits include reducing lines at the point of sale, improving hygiene, reducing the risk of carrying large amounts of cash, increasing sales volume, making cash collection easier (Kimiagari & Baei, 2021), enhancing customer service (Adeoti & Osotimehin, 2012), increasing convenience, providing more service options, and making banking services more affordable (Williams, Olalekan & Timothy, 2018). The use of POS terminals in the Nigerian banking system offers many advantages for both banks and customers. Customers are able to manage their financial transactions electronically and from any location, eliminating the need to visit a physical branch (Chedrawi, Harb & Saleh, 2019). This provides customers with the flexibility to perform banking operations at any time, without the limitations of branch hours (Awoniyi, 2022). Simply put, the impact of POS adoption on the Nigerian banking system is that it offers a self-service option that eliminates time and location constraints, while providing comfort and accessibility to customers (Kavitha, 2017). Despite the perceived security risks associated with the use of POS terminals, the people of Nigeria still choose to use the terminals because of their convenience, flexibility, speed, efficiency, and accessibility.

1.4 Challenges of POS Terminal in the Nigerian Banking System

In spite of the benefits that the use of POS technology brings to the Nigerian banking system, such as cost-effectiveness and ease of processing (Akhisar, Tunay & Tunay, 2015), there are several challenges that hinder its adoption. These challenges include a lack of adequate infrastructure, low levels of internet access and financial literacy, high transactional costs, and security concerns (Nwakoby, Okoye, Ezejiofor, Anukwu & Ihediwa, 2020). The study conducted by Ekele and Ukpata (2020) explored the implications of e-banking on commercial banks' performance in Nigeria and found that the protection of sensitive information, password insecurity, and network failure are some of the major issues that impact the use of POS terminals.

Some studies have suggested that security concerns are a major factor that deters banking customers from using POS terminals (Khan, Olanrewaju & Anwar, 2018 & Sudharsan, 2019). However, other studies have found that security is not a significant challenge in the adoption and use of POS services (Lusaya & Kalumba, 2018; Masoud & AbuTaqa, 2017). In addition, the high transactional costs imposed by banks on customers can also discourage the use of POS terminals (Ayodele, 2014; Osazevbaru & Yomere, 2015). The high charges and fees associated with the use of POS terminals can result in resistance from the banking public, particularly among unbanked populations (Osazevbaru & Yomere, 2015).

According to Williams, Olalekan, and Timothy (2018), the implementation of Point of Sales (POS) systems in Nigeria is seen as a means to transition to a cashless economy from the current cash-oriented payment system. However, the authors note that there is a concern for trust and security in the use of POS terminals. The security of POS can be compromised through network attacks, unauthorized access to customer accounts through false authentication, and breaches in data transactions (Okeke, Nwatu, & Ezeh, 2017). This lack of security raises concerns for the privacy and security of personal information, which affects user confidence in the system's ability to securely complete transactions.

While POS adoption provides benefits such as improved speed and communication, better product quality, and a competitive advantage, it also has a potential impact on job security for employees in the banking sector (Ololade & Ogbeide, 2017). The increased focus on technological advancements in the banking industry, such as the implementation of e-banking platforms like POS, has led to the obsolescence of certain job skills, contributing to higher employee turnover and job insecurity.

The cost of withdrawing money from Point of Sale (POS) terminals in Nigeria has become quite high more recently because of the scarcity of the new naira notes, leading to some concerns among the general public as at the time this paper was being drafted. However, the high cost of using POS has become a major concern, as it is seen as a hindrance to wider adoption of the technology. This increase in cost is often attributed to the transaction fees charged by banks and other financial institutions for the use of the POS terminals. These fees can vary widely, and they can add up quickly, especially for those who use the terminals regularly. The high cost of using POS is a particular issue for those with lower incomes, who may find it difficult to justify the cost of using the technology, especially when compared to the cost of traditional banking services.

Additionally, the high cost of using POS terminals can also discourage people from using the technology, as they may opt for cash-based transactions instead. This can undermine the goal of promoting a cashless economy and reduce the potential benefits of using POS technology, such as improved security, convenience, and accessibility. In conclusion, the high cost of using POS terminals in Nigeria remains a challenge that needs to be addressed in order to encourage wider adoption of the technology and promote the growth of a cashless economy. This could involve reviewing and reducing the fees charged for using POS terminals, as well as exploring alternative methods of payment that are more affordable and accessible to the general public.

2.0 Theoretical Framework
2.1 Technology Acceptance Theory
This study is underpropped by the Technology Acceptance Theory which was originally propounded by Fred Davis in 1989. The theory is alternatively termed Technology Acceptance Model (TAM). The theory was later developed by Davis, Bagozzi, and Warshaw (1989) to further explain how users' decision to adopt a technology is affected by several factors regarding when and how new technology can be used when presented (Aduaka & Awolusi, 2020). Technology acceptance theory assumes rational decision making on the part of adopters who intend to or currently adopt technology (Awoniyi, 2022). The chief proponent of the theory argued that the best way of increasing technology usage was by improving the acceptance of the technology (Obi-Nwosu, Onuoha & Okoye, 2021).

The theory emphasized that the two basic factors considered by rational users before adopting a technology are perceived ease of use (PEOU) and perceived usefulness (PU) (Nwankwo & Agbo, 2021). Perceived usefulness (PU) entails the extent to which the user believes that the use of a particular technology leads to improved job performance (Oniore & Okoli, 2019); while perceived ease-of-use (PEOU) connotes the extent to which the individual believes that the use of a particular technology does not require more personal effort (Amaduche, Adesanya & Adediji, 2020). In terms of perceived usefulness, scales that are deployed cover the speed of work done, accuracy of task completed, increased productivity, effectiveness and employee efficiency (Omotayo & Dahunsi, 2015). The scales of perceived ease of use include whether the technology is easy to learn, controllable, clear and understandable (Olaiya & Adeleke, 2019).

The major criticism of technology acceptance theory is that it failed to take into account the costs involved in acquiring a new technology. This is because adopters who may be willing to adopt a new technology may not also have the necessary resources to so do (Asidok & Micheal, 2018). The Technology Acceptance Theory can be used to explain the effect of point of sale adoption and its challenges on the Nigerian banking system. This is because ease of payments and convenience which are some of the numerous advantages of using POS terminal (Morufu, 2016) encourage users to adopt POS technology. However, lack of adequate infrastructure required to run POS, irregular network connectivity which erodes the trust of the users, and security of network communications (Williams, Olalekan & Timothy, 2018) tend to reduce the perceived usefulness of POS terminals, resulting in low adoption and utilization of POS terminal.

2.2 Theory of Reasoned Action
The Theory of Reasoned Action (TRA) was formulated in 1975 by Fishbein and Ajzen. TRA is applied to explain the behaviour surrounding the acceptance of technology. The theory emphasizes on four general concepts which are behavioural attitudes, subjective norms, intention to use and actual use (Nwankwo & Agbo, 2021). The tenet of the theory of reasoned action is that individuals evaluate the consequences of a particular behaviour and create intentions to act which are consistent with their evaluations. Behavioral intention is an indication of an individual's readiness to perform a given behavior (Amaduche, Adesanya & Adediji, 2020).

Theory of Reasoned Action argues that the behaviour of individuals can be predicted from their intentions, which can be predicted from their attitudes and subjective norms (Fishbein & Ajzen, 1975). Following the chain of prediction further back, attitudes can be predicted from an individual's beliefs about the consequences of the behaviour (Amaduche, Adesanya & Adediji, 2020). Subjective norms perceived are a person's own estimate of the social pressure to perform the target behavior (Olaiya & Adeleke, 2019). Subjective norms can be predicted by knowing how significant other individuals think the behaviour should or should not be done (Oniore & Okoli, 2019).

The theory is related to the study because the intent of the user to make use of, agree or adopt POS terminal is determined by behavioral intent, according to TRA. From the perspective of electronic banking and e-payment systems such as Point of Sale terminal, theory of reasoned action advocates that the factors which influence the intention of users to adopt POS do so indirectly by influencing the attitudes and subjective norms of the users. The intent to adopt POS channel is higher when a person positively assesses the consequences of executing a behaviour (Aduaka & Awolusi, 2020). Therefore, POS terminals may be adopted more if the people positively asses it to offer more convenience, flexibility, speed, efficiency and accessibility of transaction.

2.3 Innovation Diffusion Theory

Innovation Diffusion Theory was propounded by Everett M. Rogers in 1983. The theory is coined from the combination of two words: innovation and diffusion. Innovation refers to an idea, practice or project which is perceived as new for adoption by an individual (Ekechukwu, 2016). Diffusion entails the process with which innovation is passed on through channels over a period of time between the participants in a social system. The four main elements that work together in this process of diffusion of spreading new idea are communication, innovation, time channels & social system (Oniore & Okoli, 2019). These four elements go through the following five major steps: Knowledge, Persuasion, Decision, Implementation & confirmation.

The main proposition of this theory is that innovation adoption is a process aimed at reducing the uncertainty about the latest technology. Individuals to adopt the new technology need to gather and synthesize information about the technology. Thus, the adopters of an innovation will need to first have the knowledge of the innovation, be persuaded to adopt the innovation, make a decision to either adopt or not, implement the decision and confirm whether the decision made to adopt the technology meets the criteria of compatibility, relative advantage, trial ability, complexity and observability (Rogers, 1983).

The study is related to the Innovation Diffusion Theory based on the criteria of relative advantage and compatibility. The criterion of compatibility is the extent to which an innovation is perceived as consistent with the existing values, past experiences and the needs of potential adopters (Ekechukwu, 2016). Relative advantage is the degree to which an innovation is perceived as being better than the idea or technology before it (Oniore & Okoli, 2019); it requires the adopter to analyze the costs and benefits of adopting a technological change, which can be expressed economically or socially. Thus, it can be argued from the postulations of the theory that POS terminal is adopted because they help banks keep and enhance the loyalty of their customers, provide opportunity to the banks to increase market share and increase customer satisfaction. Finally, the criterion of relative advantage supposes that POS terminal is adopted for the reason that it reduces operational and administrative cost of the bank which helps to improve banks' competitive positions in the banking industry (Hammouri, Majali, Almajali, Aloqool, & AlGasawneh, 2021; Kimiagari & Baei, 2021). Therefore, the study is theoretically underpropped by Innovation Diffusion Theory because this theory considers cost of adoption as one of the criteria for factors influencing the adoption of POS terminal.

2.4 Conceptual Framework of the Study
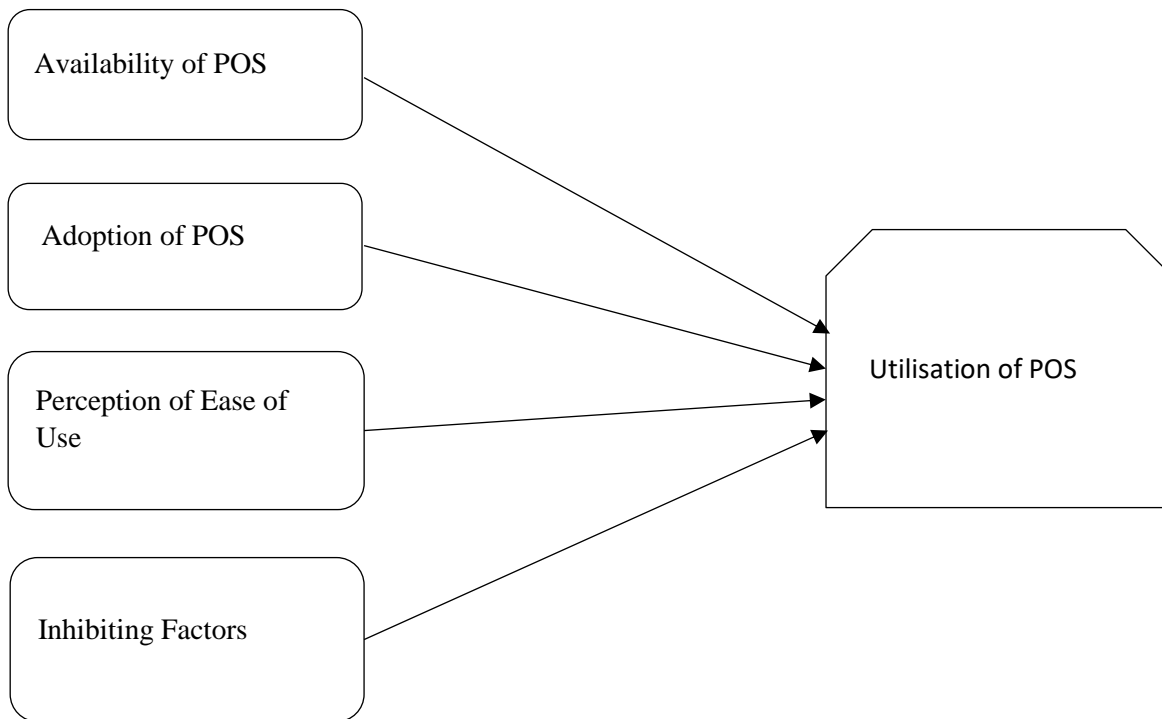
Figure 1 Conceptual Framework

The conceptual framework above shows the link between the independent variables and the dependent variable. The utilization of POS depends on its availability. However, banked masses will tend to adopt POS terminals if they perceive them easy to use. Finally, there will be low utilization of POS when the inhibiting factors are enormous.

3.0 Empirical Review

In their study, Mohammed, Ibrahim and Muritala (2022) investigated the impact of the Point of Sale (POS) payment system on the performance of commercial banks in Nigeria. Using an ex post facto research design, they gathered data from the economic reports and statistical bulletin of the Central Bank of Nigeria, covering the period from Q1 2007 to Q4 2020. To analyze the relationship between payments system innovations and the financial performance of commercial banks, they employed the Auto-Regressive Distributed Lags (ARDL) bounds approach to co-integration. The findings showed that POS transactions have a positive and significant effect on the return on assets of commercial banks in Nigeria. The authors recommend that commercial banks in the country should launch extensive mass media campaigns to educate the public about payments system innovations.

On the other hand, Okonkwo and Ekwueme (2022) conducted a study to determine the impact of the POS payment method on the financial performance of deposit money banks in Nigeria. Adopting an ex post facto research design, the authors sampled 13 deposit money banks out of the 22 banks operating in the country and collected data from the CBN Statistical bulletin and annual reports of the sampled banks for the period from 2009 to 2019. Regression analysis was performed using E-Views 9.0 statistical software. The results showed that the POS payment method had a negative effect on the return on assets of quoted deposit money banks in Nigeria, though this effect was not statistically significant at the 5% level of significance. The authors suggest that banks should host seminars and workshops to educate clients and merchants about the advantages of the POS payment method.

Awoniyi (2022) explored the adoption of digital banking in Nigeria through the lens of an extended Technology Acceptance Model (TAM) framework. The study involved the administration of questionnaires to 250 participants using an electronic method, with a reliable research instrument confirmed through a Cronbach's alpha test with a value greater than 0.70. The sample size was determined through purposive sampling and multiple regression was used to analyze the data. The results revealed that motivation for the adoption of digital banking (as proxied by perceived usage, ease of use, security, and banking regulation) had a significant impact on both mobile and internet banking ($AdR2 = 0.255$, $F = 8.357$, p-value = 0.000 and $AdR2 = 0.270$, $F = 8.960$, p-value =

0.000, respectively). The study concluded that factors outside of the traditional TAM variables, such as security and banking regulations, play a critical role in the adoption of digital banking and should be considered in future technology adoption models.

Adetayo, Mokuolu, and Fayomi (2021) sought to examine the impact of using POS terminals for cash withdrawals, money transfers, and payment of utilities on customer satisfaction in the Nigerian banking sector. The study used a descriptive research design and surveyed 320 regular customers of POS operators through systematic and purposive sampling. Logit modeling was used to analyze the primary data collected. The results showed that factors such as confidentiality, transaction speed, operator friendliness, competitive charges, and convenient location were the major drivers of customer satisfaction when using POS terminals. The study concluded that the deployment of POS terminals had a positive impact on customer satisfaction in the banking sector and recommended increased deployment to reduce congestion at banking halls and ATM terminals.

Ozoji, Iwara, Ezuwore-Obodoekwe, Inyada, Ezechukwu, Ayem-Fella, Ezuma, Ebisi, and Okoroiwu (2021) examined the effect of point of sale (POS) transactions on the security of banking transactions in the Nigerian economy. The study used an ex-post facto research design and secondary data sources, analyzing aggregate quarterly data from all deposit money banks operating in Nigeria from 2012 to 2019. Error Correction Model estimation and Autoregressive Distributed Lag model estimation were used to test hypotheses after conducting the Augmented Dickey Fuller Unit Root Test and co-integration test. The results showed that the introduction of cashless banking through POS transactions in Nigeria had not significantly affected the number of fraud and forgery cases in deposit money banks, but had significantly impacted the amount involved in attempted or reported fraud and forgery. The study also found that cashless banking via POS transactions had not significantly affected actual losses due to fraud and forgery.

Obi-Nwosu, Onuoha, and Okoye (2021) investigated the impact of POS transactions on the growth of deposit money banks in Nigeria. The study employed an ex-post facto research design and utilized data from various sources such as the Nigeria deposit Insurance Corporation, CBN annual reports, and online journals. A linear regression was adopted for both functional and statistical models. The results showed that POS transactions had a positive impact on the asset growth of deposit money banks in Nigeria, with a regression coefficient of 1.334829.

Nwankwo and Agbo (2021) investigated the effect of point of sale terminal transactions on the performance of commercial banks in Nigeria. The study used an ex-post facto research design, analyzing data from 2013 to 2017, and found that point of sale transactions had a negative but non-significant effect on the performance of the banks. The authors recommended that the banks adopt innovations to improve their profitability.

Madugba et al. (2021) analyzed the impact of point of sale transactions on the financial performance of deposit money banks in Nigeria. Data was collected from various sources including the Central Bank of Nigeria's Statistical Bulletin and National Bureau of Statistics' Statistical Bulletin from 2005 to 2019, as well as from banks' published financial statements. An ex-post facto research design was used and regression analysis was performed. The results showed that point of sale transactions significantly affect the return on assets of deposit money banks in Nigeria.

Nwude, Igweoji, and Udeh (2020) studied the role of point of sale terminals as a tool for financial inclusion in Nigeria. Using a longitudinal research design, the researchers analyzed data collected from the Central Bank of Nigeria, National Financial Inclusion Strategy Bulletin, and World Bank economic indicators from 2007 to 2017. Regression analysis was performed, and the results showed that the use of point of sale terminals has made a positive but non-significant contribution to promoting financial inclusion in Nigeria.

Anyanwu and Anumaka (2020) examined the impact of point of sale transactions on cashless policy, issues, and prospects in the Nigerian economy. The study used a survey research design and analyzed data collected from a sample population of 500 respondents drawn from various point of sale operating centers. The results showed that point of sale transactions had a significant and positive impact on the cashless policy in Nigeria, and the authors recommended that point of sale terminals be deployed in various areas to facilitate exchange transactions and reduce cash-based transactions in the economy.

Ekele and Ukpata (2020) analyzed the implications of e-banking on the performance of commercial banks in Nigeria. The study used secondary data from the Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics from 2000 to 2017 and found a significant relationship between e-banking services and the performance of commercial banks in Nigeria. The results also showed that the commercial banks were yet to maximize the opportunities provided by the e-banking system and suggested that they integrate e-banking into their operations beyond the current basic level of transactions.

Amaduche, Adesanya, and Adediji (2020) investigated the impact of electronic banking on the operations and performance of deposit money banks in Nigeria using a case study of FBN, UBA, and GTB. Primary data was collected through questionnaires administered

to staff of these three banks. The results showed that e-banking plays a significant role in enhancing banks' operations and performance.

Aduaka and Awolusi (2020) conducted a survey research to assess this impact. They collected primary data through questionnaires from both bank staff and customers, and secondary data from the bank's audited financial statements from 2010 to 2017. The study found that POS transactions had a negative and significant effect on the net interest margin of the Nigerian banking industry. The authors recommended that Nigerian banks adopt a customer-centric business strategy by being innovative and improving their products.

Michael, Umar, and Busari (2020) studied the impact of POS transactions on bank performance in Nigeria using secondary data from the audited annual financial statements of deposit money banks listed on the Nigerian Stock Exchange and data from the Central Bank of Nigeria. The study found no significant positive effect on the return on equity (ROE), return on assets (ROA), and earnings per share (EPS) of banks in Nigeria. The authors recommended a campaign to raise awareness and encourage clients to use these facilities.

Olaiya and Adeleke (2019) investigated the effect of point of sale transaction value (POSTV) on the profitability of deposit money banks (DMB) in Nigeria from 2010 to 2018. The study used secondary data from the Central Bank of Nigeria's Statistical Bulletin and Financial Stability Reports. The results showed a positive relationship between POSTV and return on assets (ROA).

Oniore and Okoli (2019) studied the impact of POS terminals on the performance of money deposit banks in Nigeria from 2006 to 2017 using time series quarterly data. The study found a positive and significant effect on the return on assets of banks in Nigeria. The authors suggested that banks focus on their needs and use the right technology to achieve their goals.

Ibrahim and Daniel (2019) studied the impact of e-banking on the development of the banking sector in Nigeria. They conducted a survey of 92 respondents in a mortgage bank in Wuse, Abuja, using a questionnaire designed in Likert scale format. The results showed that e-banking significantly improves the Nigerian banking system.

Williams, Olalekan and Timothy (2018) conducted a study to examine the relationship between consumer trust, adoption of Point of Sale (POS) technology, and POS security in selected business organizations in Lagos state, Nigeria. The study used a cross-sectional survey research design and obtained a sample of 2,059 respondents from a population of 11,663 individual SMEs and business organizations in Lagos State. The findings revealed a significant positive relationship between customer trust and adoption of POS (r=0.373; p<0.01) as well as between POS security and adoption of POS (r=0.437; p<0.01). The authors recommended that security and trust should be prioritized to enhance the adoption of POS technology in Lagos state.

Akara and Asekome (2018) investigated the effect of POS transactions on the profitability of commercial banks in Nigeria. The study used a sample of 6 banks from the 15 banks listed in the Nigerian Stock Exchange and analyzed the data over a 6-year period from 2009-2014. The results showed that the utilization of POS had a positive and significant effect on the Return on Asset (ROA) and Return on Equity (ROE) of the banks. The authors recommended that the cashless policy should be strengthened and potential fraud exposures should be addressed to further enhance the use of POS technology.

Iluno, Farouk and Saheed (2018) studied the impact of electronic banking services and products, including POS, on customers' satisfaction in Kaduna State, Nigeria. The study used a survey research design and collected data from a sample of 400 respondents through informal interviews, focus groups, and a structured questionnaire. The results indicated that electronic banking services and products had a significant positive impact on customers' satisfaction. The authors recommended that the Central Bank of Nigeria should develop a policy framework to enhance electronic banking operations and prioritize customer satisfaction.

Ololade and Ogbeide (2017) explored the issues and challenges of e-banking in Nigeria. The study adopted a survey descriptive research design and selected a sample of 300 respondents from all the customers and staff of three selected bank branches in the Benin metropolis. The findings indicated that employees' job security had a positive relationship with e-banking and significantly influenced e-banking in Nigeria, while customers' satisfaction had a positive relationship with e-banking and also influenced its penetration in Nigeria.

In the study conducted by Okeke, Nwatu, and Ezeh (2017), the researchers sought to understand the factors that impact the adoption of Point of Sale (POS) e-payment systems in Nigeria. They extended the Technology Acceptance Model (TAM) by adding two new variables, consumer awareness and security of operations, to better understand how these factors influence Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which are the original constructs of the TAM. The study was based on a sample of 400 respondents in Awka, Nigeria and the results showed that PEOU and PU positively and significantly impact POS adoption.

Additionally, the study found that security has a positive and significant impact on PEOU, but only an insignificant impact on PU. Consumer awareness was found to have a significant positive impact on PU, but no significant impact on PEOU.

Ekechukwu (2016) conducted a study on the effect of e-banking on the economic growth of Nigeria, with a focus on Union Bank plc in Enugu. The study found that e-banking has greatly boosted the Nigerian economy and the banking industry. The study recommended that automated employee services should be encouraged and that technical services staff should be placed in charge to reduce duplication of tasks.

Ahmadu, Shagari, and Olusegun (2015) examined the relationship between the adoption of POS terminals and the liquidity of deposit money banks in Nigeria. The study used a time series design and data from 2006-2014. The sample size was 23 deposit money banks in Nigeria. The results showed that there was no significant relationship between the use of POS terminals and the liquidity of deposit money banks.

Omotayo and Dahunsi (2015) investigated the factors that influence the adoption of POS machines by organizations in Lagos and Ibadan. The study used the Technology Acceptance Model as the theoretical framework and surveyed 200 organizations that have adopted POS in the two cities. The results showed that subjective norms and PEOU have a significant relationship with the adoption of POS, while the characteristics of the organizations, image, and PU do not have a significant relationship with the adoption of POS.

4.0 Summary of Reviewed Empirical Literature

Table 1: Empirical Literature Reviewed

S/N	Author(S)	Year	Related Objective	Methodology	Major Findings
1.	Mohammed, Ibrahim and Muritala	2022	Effect of POS payments system on the performance of commercial banks in Nigeria	Ex-post facto design on secondary data; Auto-Regressive Distributed Lags	POS transactions positively affect return on assets of commercial banks in Nigeria
2.	Okonkwo and Ekwueme	2022	Effect of POS payment method on the financial performance of deposit money banks in Nigeria	Ex post facto research design on secondary data; Regression analysis	POS payment method negative and insignificantly affects return on assets of quoted deposit money banks in Nigeria
3.	Awoniyi	2022	Digital Banking Adoption in Nigeria: The Place of Technology Acceptance Model	Survey design on primary data; Multiple regression method	Perceived usage, ease of use, security and banking regulation significantly affect digital banking
4.	Adetayo, Mokuolu and Fayomi	2021	Effect of cash withdrawal, money transfer and payment for utilities using POS terminals on customer satisfaction in the Nigerian banking sector	Descriptive research design on primary data; Logit regression model	Confidentiality, speed of transaction, friendliness of POS operator, competitive charges and convenient location affect customer satisfaction with the use of POS
5.	Ozoji, et al.	2021	Effect of POS terminals transactions on insecurity of banking transactions in Nigeria	Ex-post facto research design on secondary data; ECM and Autoregressive Distributed Lag	Introduction of cash-less banking through POS terminals transactions does not affect fraud and forgery cases
6.	Obi-Nwosu, Onuoha and Okoye	2021	Effect of Point of Sale (POS) transaction on the growth of deposit money banks in Nigeria	Ex-post facto research design on secondary data; Linear regression	Point of Sale (POS) transaction has a positive impact on asset growth of deposit money banks in Nigeria
7.	Nwankwo and Agbo	2021	Effect of point of sale terminal transaction on the performance of	Ex post facto research design on secondary data; regression model	Point of sale terminal transaction has a negative and non-significant effect on

			Nigerian commercial banks		the performance of the commercial banks in Nigeria
8.	Madugba, Egbide, Dike, Agburuga and Onwubiko	2021	Impact of POS transaction on the financial performance of Nigerian deposit money banks	Ex post facto research design on secondary data; regression analysis	POS transactions significantly affect ROA of deposit money banks in Nigeria
9.	Nwude, Igweoji and Udeh	2020	Role of POS terminal as a tool to financial inclusion in Nigeria.	Longitudinal research design on secondary data; Regression analysis	The use of POS does not significantly promote financial inclusion in Nigeria
10.	Anyanwu and Anumaka	2020	Impact of Point of Sale (POS) on cashless policy, issues and prospect in Nigeria economy	Survey research design on primary data Cointegration, ordinary least squares, autoregressive distributed lag, unit root and Granger causality	POS has significant and positive impact on cashless policy in Nigeria
11.	Ekele and Ukpata	2020	Implications of E-banking on Commercial Banks' Performance in Nigeria	Ex-post facto research design on secondary data; Panel regression techniques	Protection of sensitive information, password insecurity and internet failure are associated with the use of e-banking facilities in Nigeria
12.	Amaduche, Adesanya and Adediji	2020	Impact of electronic banking on the operations and performance of deposit money banks in Nigeria	Descriptive survey research design on primary data Pearson correlation	E-banking plays significant roles in enhancing banks' operations and performance
13.	Aduaka and Awolusi	2020	Impact of POS terminals on the profitability of the Nigeria banking industry.	Survey research design on primary data; Multiple regression analysis	POS transactions have a negative and significant effect on the net interest margin of the Nigeria banking industry
14.	Michael, Umar and Busari	2020	Effect of POS transactions on bank performance in Nigeria.	Ex-post facto research design on secondary data; Multiple regression analysis techniques	POS transactions have no significant positive effect on the return on equity (ROE), return on assets (ROA), and earnings per share (EPS) of quoted banks in Nigeria
15.	Olaiya and Adeleke	2019	Effect of point of sale transaction value (POSTV) on profitability of deposit money banks (DMB) in Nigeria	Ex-post facto research design on secondary data; Autoregressive Distributed Lags	Point of sale transaction value (POSTV) has a positive relationship with ROA
16.	Oniore and Okoli	2019	Impact of point of sale terminal on the performance of money deposit banks in Nigeria	Longitudinal research design on secondary data; Ordinary Least Squares	Utilization of point of sale terminal positively and significantly affects the return on assets of banks in Nigeria
17.	Ibrahim and Daniel	2019	Impact of e-banking on the development of banking sector in Nigeria	Survey research design on primary data; Pearson product moment correlation coefficient	E-banking significantly improves the Nigerian banking system
18.	Williams, Olalekan and Timothy	2018	Consumer trust and adoption of POS in selected business	Cross-sectional survey research design on primary data; Pearson Product	There is a significant positive relationship between

				Moment correlation statistics	customer trust and Adoption of POS
19.	Akara and Asekome	2018	Effect of POS transactions on the profitability performance of commercial banks in Nigeria	Ex-post facto research design on secondary data; Ordinary least Square multiple regression	Utilization of POS has a positive and significant effect on both the ROA and ROE of the banks
20.	Iluno, Farouk and Saheed	2018	Impact of electronic banking on customers' satisfaction in Kaduna State, Nigeria	Survey research design on primary data; Multiple regression analysis	Electronic banking products such as POS positively affect customers' satisfaction in Kaduna State
21.	Ololade and Ogbeide	2017	Issues and challenges of e-banking in Nigeria	Survey descriptive research design on primary data; Correlation and OLS regression analysis	Employees' job security has a positive relationship with E-banking; e-banking positively relates to customers' satisfaction
22.	Okeke, Nwatu and Ezeh	2017	Consumer adoption of Point of Sale e-payment System in Nigeria	Survey descriptive design on primary data; Structural Equation Modelling	Perceived ease of use and Perceived usefulness positively and significantly impact POS adoption
23.	Ekechukwu	2016	Effect of e-banking on the economic growth of Nigeria	Case study survey approach on primary data; Pearson correlation coefficient and ANOVA tool	Electronic banking boosts the Nigerian economy and that of the banking industry
24.	Ahmadu, Shagari and Olusegun	2015	Adoption of point of sale terminal and liquidity of deposit money banks in Nigeria	Ex-post facto research design on secondary data; correlation analysis	There is no significant relationship between point of sale and liquidity of deposit money banks in Nigeria
25.	Omotayo and Dahunsi	2015	Factors affecting adoption of POS by organisations in Lagos and Ibadan metropolis, Nigeria	Survey design on primary data; Regression analysis	Subjective norms and perceived ease of use have significant relationship with adoption of POS machine by the organisations

Source: Empirical literatures reviewed, 2023

5.0 Conclusion and Recommendations

The use of POS serves as one of the electronic payment systems and payment processing device developed to increase, improve and provide secure e-payment transactions while decreasing the percentage of cheque and cash transaction. The conclusion drawn from the findings of the study adduce to the fact that POS services help banks keep and enhance the loyalty of their obtainable customers, provide opportunity to the banks to increase market share and increase customer satisfaction. The import of POS adoption to the banking system is more emphasized because it reduces operational and administrative cost of the bank which helps to improve banks' competitive positions in the banking industry. Therefore, the utilization of POS terminals offers the Nigerian banking system several opportunities to meet the needs of existing customers and attract potential clients because of the benefits which banks and their customers derive from the use of POS channel and services. However, among the factors identified as responsible for the low adoption of POS terminals in Nigeria are exorbitant transaction charges, lack of adequate infrastructure required to run POS, irregular network connectivity which erodes the trust of the users, and security of network communications.

Banking consumers are more easily enabled to electronically manage their banking transactions without having to visit a physical branch. This enables customers to manage their financial operations with both flexibility and ease on a 24/7 basis instead of getting restricted by the timings of the physical branch. In simple terms, the major impact of POS adoption on the Nigerian banking system is that it provides a self-service that eliminates time and space constraints in the performance of banking operations while ensuring comfort and availability for customers. Based on the empirical analysis conducted, the researcher makes the following recommendations.

1. The network that powers POS technology should be enhanced in order to increase the usage of POS terminals that provides opportunity to banks to have momentous cost advantage and reduction in their operational and administrative cost.

2. The charges and fees on the use of POS terminals should be considerably lessened in order to avoid discouraging banked and unbanked population from using such channel to access the services of the banking cubicle.

3. Bank customers should often utilize POS terminals to manage their financial operations with both flexibility and ease on a 24/7 basis instead of getting restricted by the timings of the physical branch.

4. The security of POS terminals should be toughened in order to protect sensitive information and reduce password insecurity which are some of the major challenges that encumber the use of POS facilities.

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