Evaluating the Role of POS Terminals in Enhancing Cashless Transactions and Business Performance in Delta State

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Abstract

The relevance of point-of-sale (POS) is a subject of interest for a cash-lite society. Therefore, this study analyzed the benefits, challenges, and effectiveness of point of sale in Business in the Nigerian economy. The study used a cross-sectional survey to collect data from 50 randomly sampled respondents in Ughelli, Ughelli North Local Government Area of Delta State. Thus, the data collected were analyzed using the Statistical Package for Social Sciences (SPSS). The findings of this study showed that despite the challenges of POS terminals, 47 respondents, representing 97%, find them beneficial because they enhance trust, security, and a cash-lite society and boost business growth. The study also justified the theories of TAM and DOI models in understanding technology adoption. We therefore recommend POS usage as the preferred payment option for cash transactions.

Keywords: *Automated Teller Machine, Business growth, cashless environment, Point of sale, payment transaction, Retail stores*
JEL Classification: O33, E42, L81, G21, M31

1. Introduction

Before the electronic payment system, financial transactions performed manually caused customers to be waiting and dissatisfied. The manual work entails human efforts in posting from one ledger to another ledger account. Besides, the Nigerian payment cash-driven system failed to guarantee the much-needed competent and operational transactions required for a justifiable financial advancement. Among the challenges of manual financial transactions were related to armed robberies, currency management, counterfeit notes, carrying large quantities of currency notes, money laundry, queues in bank halls, printing and currency sorting (Osazevbaru & Yomere, 2015). According to the Central Bank of Nigeria (CBN 2021), the cost of currency management in 2020 was ₦65, 892.34 million and in 2021 ₦69,048.04 million representing an increase of ₦3,155.70 million or 4.79% (CBN report 2021). The figure represents an increased cost resulting from currency movement, sorting, printing, logistics, and security, to mention a few. It's not surprising, the currency outside the bank is beyond supervision, operational procedures and the ability to attain set financial strategies (CBN 2021). Therefore, to reduce cash in circulation, as well as currency management costs, the CBN introduced a digital payment system in 2011. Hence, commercial banks shifted from cash

services to cashless services by introducing digital channels like Automated Teller Machines (ATM), Point of Sale (POS) terminals, internet (WEB) and mobile phones apps. These cashless services have predominantly enhanced digital payment and significantly reduced cash payment systems but have not eliminated cash transactions. Accordingly, the digital payment system has increased currency circulation within financial institutions and enhanced monetary and economic measures (Akazue et al., 2024a). The cashless economy, therefore, entails using cash and digital transactions but is dominated by digital transactions (Ako, Aghware, Okpor, Akazue, Yoro, Ojugo, Setiadi, Odiakaose, Abere, Emordi, Geteloma, & Ejeh 2024; Akazue, Esiri, & Clive 2024a; Mega, Akazue, Apene & Hampo 2024).

POS is an electronic device used to check debit /credit card balances, make payments for an item purchased, and fund transfer when the card is placed into the POS device and an authorization pin is activated to initiate action and confirm successful/failed transactions. POS terminal functions at any point where financial transactions take place, such as shopping malls, hotels, transport stations, airlines and the rest, (Okofu, Anazia, Akazue, Ogeh, & Ajenaghughrure 2023; Akazue, Onovughe, Omede & Hampo 2023). An ATM device, on the other hand, is a non-mobile electronic device that bank customers use at fixed designated locations to make transfers, withdraw/deposit cash, check balances, and print statements by inserting an ATM card into the bank robot and entering an identification pin. However, bank customers with ATM cards are charged for services and card maintenance in Nigeria (Efobi, 2019). Internet (WEB) is another means banks reach out to their customers to send messages, such as account statements, credit/debit into a customer bank account, update customers of new products/ services, etc. via customer emails. While mobile phone is a digital customer ledger or a mobile bank branch for effective financial transactions in a cashless system (James & Rodger, 2016; Akazue & Ajenaghughrure 2015; Okofu 2018a).

Despite the recognized potentials of POS terminals as quick fund transfers, less cash handling, user-friendly and efficient payment, it is still not widely used by most businesses to facilitate merchants and consumers' transactions in a cash-based economy like Nigeria. Some of the challenges of POS terminals include transaction costs and network coverage. Other issues are security, infrastructure, society culture, lack of seriousness by banks, and legal and regulatory, illiteracy, and the understanding and usage of POS data, (Ikpefan et al., 2018, Mohammed et al., 2022, Williams et al., 2018, Osang, 2017, Nworie & Okafor, 2023, Abdulla et al., 2015, Ehiriudu et al., 2016, Bassamboo & Stamatopoulos 2017).

Extant studies on POS were focused on the banking industry (Adetayo et al., 2021; Mohammed et al., 2022; Nwankwo & Agbo, 2021; Nwude et al., 2020, Okonkwo & Ekwueme, 2022) with scanty academic studies on the other sectors of the economy such as the studies of Williams et al., (2018), Anyanwu & Anumaka (2020). This current study, therefore, is focused on understanding the adoption and impact of POS on selected retail superstores and fuel stations in Delta State of Nigeria.

2. Literature Review

Conceptual Review

The concept of POS is all-encompassing, describing various multichannel electronic functions. POS, is a mobile device that enables bank customers with electronic cards to engage in electronic transactions with merchants. In the view of Mohammed et al., (2022) the POS terminal keeps the debit and credit transactions of the users to enable the user to make payments and check balances in real-time. It means that the POS terminal has replaced cash

transaction because it is system-friendly, safe, there is quick fund transfers, it is convenient, requires payee's authentication pin to complete any action, reduces cash handling, and has multiple functions like the ATM (transfer to other banks can be made, mobile network credit and data recharge can be done). POS terminal comes in different types, brands and software for a retailer to manage business information on product strategies, identify/replenish stocks, determine customers' demand, and track sales figures (Umar et al., 2021, Awoniyi, 2020, Mohammed et al., 2022, Ikpefan et al., 2018, Ozoji et al., 2021, Morufu, 2016, Osang, 2017, Anyanwu & Anumaka, 2020).

Impact of POS on retail marketers

Today, the business environment has become competitive due to technology, enhance customers trust, and increasing consumer awareness. This has triggered engagement in the evolving digital widespread payment system in POS usage. Thus, POS was adopted to decrease cash transaction costs, resulting from its benefits and increase customer satisfaction. Other reasons are quick sales processes, transaction tracking, card reading, integrating other platforms, and planning demand and supply levels, and reduced the risk of carrying a large amount of money, robbery and cash collection easy. Therefore, using POS in retail stores has many advantages. However, POS terminals are associated with challenges like high purchase costs for POS terminals, transaction and service charges by the issuing banks, security, internet coverage, literacy and inadequate infrastructure (Abdulla et al., 2015), may increase resistance to POS adoption, (Adetayo, Mokuolu & Fayomi 2021; Kimiagari & Baei, 2021; Okonkwo & Ekwueme, 2022; Akazue & Aghaulor 2015; Nworie & Okafor, 2023; Alnaas, 2022; Nwankwo & Agbo, 2021; Ugbede, Yahaya, & Edicha 2019; Madugba, Egbide, Dike, Agburuga & Onwubiko 2021; Williams, Olalekan & Timothy 2018; Nworie & Okafor, 2023; Ozoji, Iwara, Ezuwore-Obodoekwe, Inyada, Ezechukwu, Ayem-Fella, Ezuma, Ebisi & Okoroiwu 2021).

Theoretical Review

The underpinned theoretical review for this study was based on the Technology Acceptance Model and Diffusion of Innovation theory.

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) as developed by Davis (1989) has two concepts referred to as perceived usefulness (PU) and perceived ease of use (PEOU) as the main determinants of technology adoption, which is also the challenge of the theory that it's simple (Torres & Gerhart, 2017), excluded social factors and technology cost (Asidok & Micheal, 2018). TAM, explains that PU is the capability of new technology to be faster, more convenient, effective, beneficial and enhance job performances. Conversely, PEOU argued that adaptability, controllability, less effort and understanding determine adoption. TAM is supported to influence technology adoption in the studies of Nwankwo & Agbo (2021), Aduaka & Awolusi (2020), and Williams et al., (2018). Hence, TAM was used to investigate the adoption of POS in retail stores.

Diffusion of Innovation (DOI)

DOI was developed by Rogers (2003). It opines that for an innovation to be adopted, it must go through a period and process which involves the interplay of relative advantage,

compatibility, trial-ability, complexity and observability. Rogers (2003) further explained that market forces of social systems, communication channels, times and innovation efforts influence these interplay variables. In this study, POS is perceived advantageous to cash-carrying and queening at ATM locations, because the POS service is not limited to a fix location, but can be performed at any available retail shop for cash transactions. The compatibility of POS is that despite its technicality, retailers are coping with its usage to expand their market share and satisfy their customers. Again, the social structure is promoting POS usage due to bandwagon effect and the awareness of the benefits. Studies such as Hammour et al., (2021) and Kimiagari & Bae, (2021) affirmed DOI as a model for technology adoption in the banking industry. Therefore, DOI is adapted in this study as a model that determines POS adoption in retail stores.

Empirical Review

Okeke et al., (2017) investigated factors that enhance POS adoption in Awka. Thus, using a sample size of 400 respondents, the researchers concluded that perceived usefulness, ease of use and security significantly influence POS adoption. Williams et al., (2018) investigated POS adoption and business security of SMS, with a sampled respondent of 2,059, in Lagos state. The researchers revealed that the adoption of POS terminal and trust has a positive relationship and suggested that customer security and privacy should be paramount in digital payment adoption.

Anyanwu & Anumaka (2020) examined POS's impact on the cashless policy in Nigeria. The study used 500 sample data from POS operators and revealed a positive relationship between POS adoption and cashless policy. The researcher, therefore, suggested that POS become one dominant payment transactional system to promote a cashless policy.

Nwude et al., (2020) examined the POS terminal as a tool for financial inclusion. Data collected from the World Bank and the Central Bank of Nigeria between 2007 and 2017 were analysed on regression. The findings showed that POS promotes financial inclusion. Adetayo et al., (2021) investigated customer satisfaction based on cash withdrawals, bill payments, funds transfers and cash withdrawals. A sample of 320 respondents from POS operators was analysed using logit modelling. The researchers concluded that POS significantly impact banks' customer satisfaction.

Mohammed et al., (2022) examined POS terminals on banks' performance. Data was collected between 2007 to 2020 from the central bank of Nigeria and analyzed with Auto-Regression Distributed Lags. The results showed a positive relationship between return on bank assets and POS usage and suggested a campaign on a digital alternative payment system to the cash transaction system. This study supports Amaduche et al., (2020) that digital transactions improve banks' performances and operations, (Ukadike et al 2023; Akazue 2016).

Aduaka & Awolusi (2020) carried out a study on selected banks in Nigeria to determine the impact of POS on banks' net interest, thus using sample data from 2010 to 2017 from the bank staff and customers, the researcher observed that POS terminal negatively affects banks net interest and therefore suggested that the banking industry adopt a customer orientation marketing strategy in creating innovative products/services.

3. Methodology

For this study, the researcher employed a cross-sessional survey by the use of a hard copy structured closed-ended questionnaire instrument to obtain relevant primary data from the respondents, while secondary data was obtained from extant works of literature. A sample of 50 questionnaires was distributed and returned from four (4) Superstores and four (4) fuel stations, in Ughelli, Ughelli North Local Government Area of Delta State, one of the most urbanized zones in the local government area where the electronic payment system is mostly being used. Also, data collected were analysed using Statistical Package For Social Sciences (SPSS) such as frequency table and percentage, (Okofu et al 2024a; Akazue et al 2024b).

4. Results and Discussion

Table 1: Demographic age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30 Years	38	76.0%	76.0	76.0
	31-40 Years	8	16.0%	16.0	92.0
	41-50 Years	4	8.0%	8.0	100
	Total	**50**	**100**.0%	100.0	

Source: *Field Work, 2023*

For any technology adoption, consumers' age is crucial and has an impact on the decision-making process. Table 1 shows that 38 respondents representing (76%) are between the ages of 20 – 30 years, 8 (16%) respondents are between the ages of 31 – 40 years, and 4 (8%) respondents are between the ages of 41 – 50 years. This study reveals that the youths use the POS more than the other age group.

Table 2: Demographic rank of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Sales Rep	22	44.0%	44.0	44.0
Pump Att	22	44.0%	44.0	88.0
Manager	6	12.0%	12.0	100
Total	**50**	**100**.0%	100.0	

Source: *Field Work, 2023*

Table 2 reveals that 22 respondents represent (44%) are sales representatives from both business types, 22 (44%) respondents are pump attendants in the fuel stations, while 6 (12%) respondents are managers in both business organizations. The data in Table 2 implies that POS is used by those at the lower level of the organization that has direct contact with customers.

Table 3: Demographic business type of the respondents

Frequency	Percent	Valid Percent	Cumulative	Percent
Valid Superstore	24	48.0%	48.0	48.0
Fuel Station	26	52.0%	52.0	100.0
Total	**50**	**100.0%**	100.0	

Source: *Field Work, 2023*

Table 3 also revealed that 24 respondents representing (48%) are superstores, while 26 (52%) are from the fuel stations.

Research Question One: What mode of payment is most preferred?
Table 4: Respondents mode of payment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	POS	35	70.0%	70.0	70.0
	Cash	9	18.0%	18.0	88.0
	ATM	6	12.0%	12.0	100.0
	Total	**50**	**100.0%**	**100.0**	

Source: *Field Work, 2023*

From the responses to research question two in Table 4, 35 (70%) respondents preferred the POS mode of payment, 9 respondents representing (18%) indicated cash and 6 (12%) respondents said ATM. It means POS is replacing cash and ATM transactions.

Research Question Two: What effect has POS mode of payment made in the economy of your business?
Table 5: The Effect of POS in the economy of the business

	Responses No.	Percent	Percent of Cases
Reduces cash handling and the risk of robbery	48	27.4%	96.0
Increase customers' satisfaction and sales	42	24.0%	84.0
Quick sales processes	45	25.7%	90.0
Transaction tracking	40	22.9%	80.0
Total	**175**	**100.0%**	**350.0**

Source: *Field Work, 2023*

The results from the response to research question three in Table 5, that indicates that 48 out of the 50 respondents representing 27.4% were of the view that with POS usage, there is less cash payment and reduced incidence of robbery, 42 respondents representing 24% said it increases customers' satisfaction and sales, 45 (25.7%) said there is quick sales processes

Research Question Three: How often do you experience network coverage?

Table 6: Network failure experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	30	60.0%	60.0	60.0
	Often	20	40.0%	40.0	100.0
	Total	**50**	**100.0%**	**100.0**	

Source: *Field Work, 2023*

From Table 6, 30 respondents representing (60%) said they rarely experience network failure during transactions while 20 respondents representing 40% said they experience network failure during transactions. It means that the POS terminal network is reliable.

Research Question Four: How would you evaluate the stress of using the technology of POS in your business?

Table 7: Stress in POS usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	12	24.0%	24.0	24.0
	Moderate	5	10.0%	10.0	34.0
	None	33	66.0%	66.0	100.0
	Total	**50**	**100.0%**	**100.0**	

Source: *Field Work, 2023*

From Table 7, 12 respondents representing 24% expressed low stress in POS usage, 5 respondents representing 10% showed moderate stress and 33 respondents representing 66% indicated stress-free. Imperatively the use of POS is perceived to be easy and compatible with the existing technology of ATM cards. POS operation does not require high education qualification to manage it as most users are at the lower management levels

Research Question Five: How would you assess customers' attitude towards POS usage?

Table 8: Customers' attitude towards POS usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	31	62.0%	62.0	62.0
	Bad	5	10.0%	10.0	72.0
	Normal1	4	28.0%	28.0	100.0
	Total	**50**	**100.0%**	**100.0**	

Source: *Field Work, 2023*

From Table 8, 31 respondents representing 62% respondents said customers' attitudes about using POS are good, 14 (28%) said it is normal, and 5 (10%) indicated some bad experiences with customers. Since customers' attitudes represented 62% of the respondents, it appears customers have adapted to using POS as the new payment system to replace cash transactions.

Research Question Six: What are the challenges associated with POS usage in your business you do experience?

Table 9a: Understanding and usage of POS data

	Responses		**Percent of Cases**
	No.	**Percent**	
Rarely	37	74.0%	74.0
Often	13	26.0%	26.0
Total	**50**	**100.0%**	**100.0**

Source: Field Work, 2023

Table 9b: Transaction and service charges to customers

	Responses		**Percent of Cases**
	No.	**Percent**	
High	46	92.0%	92.0
Moderate	4	8.0%	8.0
Total	**50**	**100.0%**	**100.0**

Source: *Field Work, 2023*

Table 9c: Transaction charges from issuing institutions

	Responses		**Percent of Cases**
	No.	**Percent**	
High	41	82.0%	82.0
Moderate	9	18.0%	18.0
Total	**50**	**100.0%**	**100.0**

Source: *Field Work, 2023*

Table 9d: Society culture

	Responses		Percent of Cases
	No.	Percent	
Rarely	13	26.0%	26.0
Often	37	74.0%	74.0
Total	**50**	**100.0%**	**100.0**

Source: *Field Work, 2023*

Table 9a revealed that 37 respondents, representing 74% indicated they rarely understand the data usage, while 13 respondents representing 26% disclosed they often understood the POS data for business analysis and decision-making. It means that certain features of POS are underutilized by retail and fuel stores since they rarely understand the data for the business to take advantage of its usage.

Regarding transaction and service charges to customers in Table 9b, 46 respondents representing 92% expressed high costs, while 4 respondents representing 8% noted moderates cost. It means that the customers are using the new digital payment system due to convenience, trust, and fastness despite high charges by the vendors.

Concerning transaction charges from issuing institutions in Table 9c, 41 respondents representing 82% indicated high costs by the merchants' while 9 respondents representing 18% noted that institutional costs are moderate. This implies that smaller retailers with low customer turnover will struggle to maintain, survive and continue POS usage. Imperatively, some POS users might discontinue if their operation cost exceeds the benefit.

Concerning society culture**,** Table 9d indicated 13 respondents representing 26% representing rarely while 37 respondents representing 74% indicated often. It means that the social culture in the context of this study has the attitude of POS usage. Put differently, POS adoption has a bandwagon effect on the people of Ughelli and its environs. That is to say, POS adoption by both merchants and consumers is a social trend.

Research Question Seven: The use of POS is enhancing a cashless society.

Table 10: POS usage enhances a cashless society

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	True	40	80.0%	80.0	80.0
	False	4	8.0%	8.0	88.0
	Not really	6	12.0%	12.0	100.0
	Total	**50**	**100.0%**	**100.0**	

Source: *Field Work, 2023*

The data from the response to research question seven in Table 10 showed that 40 (80%) noted that POS enhances a cashless society. However, 4 respondents representing (8%)

indicated false, while 6 (12%) said it does not enhance a cashless society. It is therefore opined. that POS is reducing cash transactions and promoting a cashless policy.

Research Question Eight: The use of POS enhances trust and security in business.

Table 11: POS enhances trust and security in business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	True	47	94.0%	94.0	94.0
	False	3	6.0%	6.0	100.0
	Not really	-	-	-	
	Total	**50**	**100.0%**	**100.0**	

***Source**: Field Work, 2023*

The results from the response to research question eight in Table 11 showed that 47 respondents representing (94%) indicated that POS enhances trust and security in a business by protecting customers' privacy, building relationships with customers and reducing cash theft. However, 3 respondents representing (6%) said it's false. It is, therefore, noted that POS enhances trust in digital transactions.

5. Conclusion and Policy Recommendations

This study argued that 21st-century youths adopt new technology quickly regardless of their position/ level in the organization. They can learn new methods as retail owners and survive in a competitive marketing environment. Also, retail stores are aware of the cashless policy and are keying into the new ways of payment transactions. This study reveals that consumers prefer digital (POS) payment to cash-based transactions. This finding supports the study of Umar et al., (2021) and Awoniyi (2020) that digital transactions have reduced cash transactions and increased currency circulation within financial institutions. The findings also revealed that POS reduces cash handling, increases customer satisfaction, and quickly deals with sales processes and transaction tracking. This finding is in line with the studies of Osang (2017), Ikpefan et al., (2018) and Alnaas (2022). Therefore, policymakers should ensure that societal and social medial marketing promotes the benefits of POS to increase user trust and security. Other findings are that the POS network is reliable, the system is not stressful, and the Nigerian people have welcomed the technology to replace cash transactions. The implication is that more retail stores will adopt POS to reduce the stress of manual transactions, Okofu (2018b).

In conclusion, POS has enhanced the cash-lite environment and financial inclusion. Also, Nigerian society is ready to accept a similar innovation if it will improve living standards in such areas as a convenience, security, trust, compatibility, and usefulness. It is, therefore, argued that POS innovation enhanced technology involvement, business performance and growth in the Ughelli metropolis and environs, (Okofu, et al 2024b; Okpor et al 2024). Although this study uses samples from retail stores, the findings support the findings in the banking industry. For instance, Adetayo et al., (2021), Mohammed et al., (2022) and Okonkwo and Ekwueme (2022). This study has, therefore, contributed to the knowledge of POS adoption by retail stores and pump stations in Nigeria.

Policymakers should identify more strategies to discourage cash-based transactions, such as further reduction in cash limits for individuals, organisations, agencies parastatals and an increase in charges for defaulters, Akazue, et al 2015; Okofu (2023). However, merchants and POS dealers should reduce charges to encourage nonusers, protect consumers' rights and fasten its adoption and financial inclusion for all. Financial institutions for POS terminals should set up agencies to monitor unfair charges imposed by the POS owners and users and create awareness of the consequences and penalties for defaulters like withholding their certificate to operate and payment of heavy fines. This will ensure they conduct their businesses with caution and consciousness, Akazue, et al (2023b). Again, users should endeavour to attend training to enjoy the full benefits and features of the POS terminal for their business growth and economic development. The study also revealed that in most retail and fuel stores, POS users find it challenging to understand and access data in the POS terminal for effective decision-making. Therefore, POS distributors should often train and organize seminal workshops or events for the effective and efficient use of POS for maximum benefits, (Akazue & Augusta 2015; Akazue, 2015).

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