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# Awareness Creation and Adoption of Point of Sales of Selected Small and Medium Enterprises (SMEs) in Lagos State, Nigeria

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## To cite this article:

Akerejola Williams Olasojumi, Okpara Eyinna Ugwuchi, Ohikhena Partrick. Awareness Creation and Adoption of Point of Sales of Selected Small and Medium Enterprises (SMEs) in Lagos State, Nigeria. *American Journal of Applied Scientific Research*.

Vol. 4, No. 3, 2018, pp. 33-40. doi: 10.11648/j.ajars.20180403.11

**Received:** October 16, 2018; **Accepted:** November 13, 2018; **Published:** December DD, 2018

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**Abstract:** Nigerian payment systems are cash-driven and it is the main mode of payments transactions. However, the Point of Sales (POS), which is meant to encourage cashless economy as against the cash-centered operations, is challenged with issues of awareness creation and security. This study examined the awareness creation and adoption of POS of selected SMEs in Lagos state, Nigeria. The study adopted a cross-sectional survey research design. The population of the study consisted of selected SMEs who are users of POS in Lagos State estimated at 11,663 and sample size of 2,059. The respondents were selected from among the SMEs used for this study. A validated questionnaire from the sectors surveyed was used for the study. The sectors include: oil & gas, banking and insurance, and manufacturing. A total of 2,059 copies of the questionnaire were administered, with a response rate of 77.1%. The Cronbach's alpha coefficients for the constructs are 0.727 for adoption of POS, 0.850 for awareness creation and 0.758 for POS security. The data were analysed using descriptive and inferential (Pearson Product Moment correlation) statistics. The findings revealed that there was a significant relationship between awareness creation and Adoption of POS ( $r=0.399$ ;  $p < 0.01$ ) and similar relationship between POS security and Adoption of POS ( $r = 0.437$ ;  $p < 0.01$ ). The study concluded that awareness creation had significant and positive relationship with adoption of POS of selected business organisations who are SMEs in Lagos State, Nigeria. The study thus recommended that adequate awareness creation be made so as to educate various stakeholders on the importance of the use of POS to ensure its adoption and assure of security of data transactions and reports generated using POS by the selected organizations in Lagos state, Nigeria.

**Keywords:** Consumer, Awareness Creation, Adoption of POS, E-payments, POS Security

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## 1. Introduction

“Organizations have become increasingly dependent on technologically based information to support and drive operational, tactical and strategic business activities, thereby making information technology intrinsic in today's business enterprise [34].”

Consequently, there is a “global advancement in technological development; and Nigeria is not left out of this advancement. Information and Communications Technology (ICT) has evolved and has become a vehicle for technological growth in the economy of many societies as it

has unarguably made life easier [23, 33, 39, 52].” Therefore, “the global acceptance of Information and Communications Technology as well as its usage have attracted and received the interest of researchers who are on regular basis out to proffer solutions to problems related to technology development for decades [12, 40, 53].” “This development had prompted further research on the utilisation and benefits of ICT to several nations in order to improve their economic development [23, 47].”

Technology acceptance has been described as how people accept and adopt some technological innovations to suite their peculiar needs.. “The user acceptance of technology has

further been explained as the willingness within a user group to employ IT for the tasks it is designed to support [15].”

The current system of high level of cash management with the attendant cost and hazard involved in moving large amount of cash, necessitates the introduction of POS. According to Business Information System in early two thousand, POS is widely regarded as safe and efficient retail payment system, which enhances the effectiveness of the financial systems, boosts consumer confidence and facilitates the functioning of commerce. Since Nigerian consumers hitherto, largely depended on the use of cash to conduct transactions, the introduction of POS by organisations in the country is expected to ease the carriage of large sums of money by consumers. Furthermore, the use of POS is also meant to enhance the effectiveness of organizations’ operations and transactions by ensuring the security of monetary assets. In this regard, “it has been observed that funds that circulate outside the banking sectors are over 90% [1, 35]”, reasons are attributable to inadequate awareness creations of the use of POS, and security especially from the bank to destinations and transactions generated from it.

In a recent study, “evolution of technology for use in financial transactions poses a lot of challenges as questions arose regarding the stability of the instrument in guaranteeing the efficiency and effectiveness of monetary policies of nations worldwide [32].” From history, different payments systems have been used e.g. barter system was common, but double coincidence of want necessitated the use of coins and paper money. However, “technological development gave rise to the use of superior instruments as with advancement in technology [32].” A little over three decades ago, the use of cash in making purchases in the United States of America declined, and increasingly adopts the use of electronic payments systems. However, “developing economies like Nigeria are still at the introductory stage of the use of alternative payments platform as recently introduced by the monetary policy maker of Nigeria, the Central Bank of Nigeria (CBN) [21].” Studies have shown that the use of cash for transactions made for payments of goods and services in many nations of the world is risky and complex, and is gradually giving way to alternative payments platform. “This is because money outside the bank that is kept at a place other than the bank cannot be subjected to financial regulations and operational procedures by regulatory agency, and this limit the ability of the regulator to achieve the set objectives [1].”

In the “CBN reports cited in [1].”, the cost of cash management was huge and given as follows: in 2009, CBN spent the sum of ₦114.6b, this rose to ₦135b in 2010, and ₦166b in 2011, and an estimated sum of ₦196b was projected for 2012, to manage currency production and services. These amounts are substantially large and require an urgent attention to address the situation, and this could be reduced to a minimal level should the economy embrace cashless and other alternative payments system especially POS. The result of this cashless system would be the reduction in the cost of printing currencies, cost of

transportation of cash, cost of sorting currencies, and security cost of managing the printed currencies. Although an average Nigerian businessman prefers cash transactions and will embrace an alternative if they are well informed or educated of its benefits and assured of its transactional integrity. This therefore prompted the Federal government coming up with policy that upon implementation would reduce the volume of cash in the economy using Lagos as the pilot state. The acceptance and increase in the use of alternative payments platform (e-payments) notwithstanding, “the adoption rate of POS was still low and this was attributable to inadequate awareness creation and security issues [3, 16, 29].” A major challenge identified in the implementation of the cashless policy hinges on the lack of awareness by the citizens, hence the urgent need to address this challenge.

A “CBN report shows the following data in volume of transactions: ATM 470,894,452; Cheques 9,764,546; Web 10,499,911; POS 47,743,919; [10].” the data indicates low penetration of POS compare to ATM. Reasons given by CBN for low adoption rate of POS include but not limited to inadequate awareness creation and security of the transactions among others. This observation also indicated that “many buyers of goods and services still do that by cash, this brings about enormous risk and high cost of cash management. It also brings about inefficiency and corruption [36]”. Similarly, as “reported in [2]”, the general increase in the adoption rate of electronic payments instruments and the rate of growth in the adoption of POS are still low compared with other e-payments platform such as ATM. “Among the factors identified as responsible for this low adoption rate is lack of motivation [21]”. Similarly, it has been posited that the “mode of use of technology is closely related to motivation and motivation is of intrinsic or extrinsic [43].”, while intrinsic motivation means performing an activity with inbuilt satisfaction and extrinsic motivation can be described as performing an activity in order to achieve a given objectives.

Another issue of concern in the adoption of technology in an organisation is security; this has been stressed in an article challenges to the efficient use of POS terminals in Nigeria. The author asserted that the efficient use of POS terminals in Nigeria will reduce the security challenges arising from fraud, and robbery occasioned by withdrawal of cash by unsuspecting customers from the bank. The importance of security of communication over the network as the network becomes available to the public is also of immense importance. Just like security on smart card a device used in POS terminal has become a critical issue as various transactions involving exchange of data and those through the internet must be well protected. The concern over the security of the smart card is premised on the need to prevent unauthorized access to critical data and other information of great importance by fraudsters and hackers who daily attempt breaking into systems. “This is one of the problems the adoption of POS in an organization is meant to address [44]”. Similar research work done also aligns with the opinion that the adoption of the POS system will help check the rampant

incidence of hacking into systems. Another study indicated that “relying on traditional security control of physical access controls, security guards at the gate of the organisation securing their assets, processes and communications has become obsolete [45].”

The complex nature of the device and the intelligence of hackers make it mandatory that adequate security be put in place in order to avoid or reduce the vulnerability of its use.

## 2. Literature Review

### *Theoretical Foundation*

A number of theories have evolved to explain adoption of technology including POS in an organization. One of the theories used in this study is “Technology Acceptance Theory [12].” This theory has two main constructs, which are perceived ease of use and perceived usefulness. Perceived ease of use posits that a person believes that using a particular system would be free of efforts and perceived usefulness believes using a system is useful for its operation. The two constructs aligned with the import of this study. The study also uses “The Unified Theory of Acceptance and use of Technology [48].”, which aims to explain user intention to use information system and subsequent usage behavior. Awareness creation is one of the most important constructs when a new technology is being introduced. This added to adoption construct are vital components of electronic service adoption. The listed theories form the bedrock for the adoption of POS in this study.

## 3. Literature Review and Hypothesis Development

In examining the implications of adoption of POS, it is necessary to look at how awareness creation and POS security relates with the adoption of POS of selected SMEs in Lagos state, Nigeria.

The “intention of earlier inventors of cash register was to create a system that will be used for recording cash transactions to prevent employee from tampering with the profit of the organisation [42].” This device soon became a tool for financial transactions as it issues receipts, functioning like sales as well as keeping the records and the reports generated from it. Improvements of technology over the years gave rise to what is today referred to as POS.

Cumbersomeness and risky nature of reliance on cash based economy in any society necessitate the adoption of POS, “because money outside the banks cannot be subjected to regulatory and operational procedures and the ability of monetary policy to achieve set objectives in the presence of sizeable currency out of Bank is limited [1]” This simply means the adoption of POS signify the acquisition and usage of POS.

POS as defined by some notable researchers is that it is a device used for recording transactions in a store, which can be said to be a modern day cash register. “[18] defined POS

as a device that is installed in the center of the sale of goods and services instead of paying cash by physical transportation of money, the transaction amount from an account holder i.e. customer are deducted from their accounts electronically, using an electronic card, while the card acceptor (seller) is paid”. Therefore, in this study, POS can be described as a device deployed in a merchant location where users swipe their electronic cards in order to make payment for purchases or services as against the use of cash.

Conceptually, there are benefits attributable to the use of POS. For example, World Bank says globally, the use of electronic payments systems was strategic in fast-tracking growth among the nations all over the world’s financial sectors. For world body like the World Bank to emphasize the pivotal role of electronic payment system underscores its importance and outlined the following benefits of electronic payment system:

- (1) Faster transactions, that is, reducing queue at the point of sale.
- (2) Improving hygiene on site, that is, eliminating bacteria through the spread of notes and coins;
- (3) Increase in sales, that is cash collection made simple.
- (4) Managing the entitlements of staff.

Other benefits include but not limited to the following: improves customer services, such as removes the need for invoice, cheques clearance etc; allow purchase and instant payments through the point of sale; discount to allow online purchases etc. The utilization of the electronic payments systems will also benefit stakeholders

Banks and card manufacturers have over the past decades been involved in processing of financial transaction electronically. The recent technological developments in the field of e-commerce have opened up other areas of development in the electronic payments system. First, the prospects of electronic commerce over the internet are creating a large demand for electronic payment methods for open networks. Secondly, the introduction of nation-wide electronic pursue schemes is creating many more opportunities where smart cards can be used for cost-effective off- line payments. There is need for adequate security in POS electronically as the device is used to transact financial businesses.

In the Nation newspaper of Sunday July 16, 2017, on Cashless policy: “Nigeria was reported to have incurred losses in billions, in addition to security concerns in banking application and POS [46].”

Visa International in its report showed that high net worth account holders neither own nor use ATM cards the channels of communications with POS, confirming that majority of the rich think that avoiding debit cards is the best way to stay protected from online fraud. Awareness needs to be created especially at the level of these categories of the Nigeria public.

The main objective of this study is to examine awareness creation and evaluate the relationship between POS security and adoption of Point of Sales of selected SMEs in Lagos State. In an attempt to come up with acceptable conclusions

the study tested the following null hypothesis:

H<sub>01</sub>: There is no significant relationship between awareness creation and adoption of POS of selected business organisations in Lagos State, Nigeria.

H<sub>02</sub>: There is no significant relationship between POS security and adoption of POS of selected business organisations in Lagos State, Nigeria.

## 4. Methodology

This study employed a cross-sectional survey research design, employing well validated questionnaire as the main research instrument. "This is consistent with the view of an who noted that many cross-sectional studies are completed with questionnaire and few others employ interviews to collect data. Similar studies on adoption of POS have employed a cross-sectional research design [1]."

The population of the study consisted of all Small and Medium Enterprise (SMEs) who are the main users or adopters of POS in Lagos state and the collaborative survey conducted by Small and Medium Enterprises Development Agencies of Nigeria and National Bureau of Statistics in 2013, put the

population at 11,663 in Lagos state. The total copies of questionnaire distributed was 2,059 and 1587 were returned representing about 77.1% of response rate.

Pilot study was conducted using small segments of the sample in order to confirm the validity and reliability of the instrument. The Cronbach's alpha coefficients for the constructs are 0.727 for adoption of POS and 0.810 for customer trust and 0.758 for POS security, "showing the reliability of the instrument while the instrument was subjected to content validity - expert opinion validity as used by [37]".

The analysis of the study was conducted using descriptive and inferential statistics done through correlation and regression analysis. Specifically; Pearson Product Moment Correlation was used to measure the relationship between the study variables.

## 5. Data Analysis, Results and Discussion of Findings

The table below represents the respondents' responses from the administered questionnaire.

*Table 1. Respondents' responses to awareness creation.*

S/N	VARIABLES	SA	A	FA	FD	D	SD
1	Consumer literacy level enhances POS adoption.	318	499	40	-	-	-
		37.1%	58.2%	4.7%	-	-	-
2	Consumer level of computer literacy influences POS adoption.	334	451	50	10	12	-
		39.0%	52.6%	5.8%	1.2%	1.4%	-
3	Ease of use of POS enhances its adoption.	418	427	12	-	-	-
		48.8%	49.8%	1.4%	-	-	-
4	Vendor's ability to impact knowledge of POS enhances its adoption.	352	475	20	10	-	-
		41.1%	55.4%	2.3%	1.2%	-	-
5	Adequate training of consumer on POS influences its adoption.	394	394	59	10	-	-
		46.0%	46.0%	6.8%	1.2%	-	-
6	Consumers' knowledge of the benefit of POS influences its adoption.	389	398	60	10	-	-
		45.4%	46.4%	7.0%	1.2%	-	-
7	Consumer education on the use of POS is still at its infancy.	395	377	85	-	-	-
		46.1%	44.0%	9.9%	-	-	-
8	Nigerians prefer the use of cash to pay for little household items on the streets.	426	357	54	10	10	-
		49.7%	41.7%	6.3%	1.2%	1.2%	-
9	Product promotion will enhance the use of POS in an organization.	374	444	27	12	-	-
		43.6%	51.8%	3.2%	1.4%	-	-

Source: Field survey, 2016

Table 1 shows responses by respondents in the questionnaire distributed and given as follows:

Statement 1 to 9 shows that majority of the respondents representing over 97% agreed that perceived ease of use, perceived usefulness, users literacy level product promotion are important awareness creation constructs and therefore an important motivators to adopt POS in selected SMEs in Lagos state. Similarly, they also agreed that when would be adopters perceived a device as having adequate security, they would be motivated to its adoption.

*Table 2. Respondents' responses on Adoption of POS.*

S/N	Variables	SA	A	FA	FD	D	SD
1	Experience is an important influence in adoption of POS in an organisation.	832	647	86	22	-	-
		57.8%	37.5%	4.0%	0.8%	-	-
2	Innovativeness influences the adoption of POS in an organisation.	854	657	57	19	-	-
		58.9%	37.8%	2.6%	0.7%	-	-
3	Availability of infrastructure enhances adoption of POS in an organisation.	1112	422	53	-	-	-
		74.2%	23.5%	2.4%	-	-	-
4	Perceived Ease of use of POS influences its adoption	835	740	12	-	-	-
		57.2%	42.2%	0.5%	-	-	-

S/N	Variables	SA	A	FA	FD	D	SD
5	Perceived usefulness of POS influences its adoption	679 47.9%	803 47.2%	105 4.9%	-	-	-
6	Ease of communicating the benefits of POS influences its adoption in an organisation	628 39.6%	870 54.8%	70 4.4%	19 1.2%	-	-
7	Skill requirements of users of POS influences its adoption	679 47.8%	809 47.5%	99 4.7%	-	-	-
8	Customer motivations will enhance the adoption of POS in an organisation	892 61.4%	584 33.5%	111 5.1%	-	-	-
9	Government and regulations can enhance the adoption of POS in an organisation	728 51.4%	698 41.0%	161 7.6%	-	-	-
10	Security of POS will enhanced the adoption of POS in an organisation	1051 70.9%	439 24.7%	97 4.4%	-	-	-
11	Customer Trust on POS will enhance its adoption in an organization	597 44.5%	895 55.5%	95 4.7%	-	-	-
12	Information quality obtained from the use of POS will enhance its adoption	562 40.8%	790 47.8%	235 11.4%	-	-	-

Source: Field survey, 2016

The response from participating respondents in Table 2 shows the following:

It is also noteworthy from the above table from Statement 1 to 12 that majority agreed with the assertion that experience, innovativeness, availability of infrastructure, ease of use of POS, perceived usefulness of POS, ability to communicate the benefits of POS to its users, skill requirements, motivation, government and regulations, security of POS, customer trust, and quality of information generated from POS enhances its adoption of selected business organisations in Lagos.

Comparing the interpretation of the responses in Table 1 and Table 2, it shows that customer trust enhances the adoption of POS in an organisation.

**Table 3.** Pearson Product Correlation for customer trust and adoption of POS of selected business organisations in Lagos state.

		Adoption of POS in an Organisation	Customer trust
Adoption of POS in Organisation test	Pearson Correlation	1	.373**
	Sig. (2-tailed)		.000
	N	1587	1587
Customer trust	Pearson Correlation	.373**	1
	Sig. (2-tailed)	.000	
	N	1587	1587

Correlation is significant at the 0.01 level (2-tailed). Source: Field survey, 2016

Table 3 shows the significant relationship between customer trust and adoption of POS in an organisation. The correlation coefficient ( $r$ ) of customer trust to adoption of POS in an organisation is .373 and the significance level is 0.01 ( $p < .01$ ). The null hypothesis was then rejected concluding that customer trust on POS has a significant relationship on adoption of POS in Lagos.

**Table 4.** Respondents' responses on POS security.

S/N	Variables	SA	A	FA	FD	D	SD
1	Data security will enhance security capability of POS	350 26.7%	988 62.7%	144 7.3%	51 1.9%	54 1.4%	-
2	Software security will aid POS security	389 29.3%	900 56.5%	276 13.9%	-	-	22 0.3%
3	Ability to secure critical data in POS enhances its security capability.	525 38.1%	918 55.5%	119 5.8%	3 0.1%	22 0.5%	-
4	Security across communication network will necessarily leads to adoption of POS.	656 47.5%	714 43.1%	173 8.4%	22 0.8%	-	22 0.3%
5	Physical security of POS will encourage its adoption.	616 44.1%	876 52.2%	73 3.5%	-	-	22 0.3%
6	Different layers of security will encourage POS usage.	823 58.1%	606 35.7%	117 5.5%	19 0.7%	-	22 0.3%
7	There is high level of confidentiality in POS	576 36.3%	836 52.7%	99 6.2%	19 1.2%	19 1.2%	38 2.4%
8	Non disclosure of personal information in POS will enhance its security.	675 42.5%	741 46.7%	168 10.6%	3 0.2%	-	-
9	Availability of superior anti-hackers software to protect the network will enhance POS security capability.	549 42.2%	592 37.9%	246 12.6%	181 7.0%	-	19 0.2%

Source: Field survey, 2016

Table 4 shows responses by respondents as follows:

Statement 1 through to 9 also shows that majority of the respondents agreed that data security on POS, software security, securing critical data in POS, security across communication network, physical security of POS, securing layers across network, high level of confidentiality in POS, non-disclosure of personal information in POS, availability

of superior anti-hackers software to protect the network will enhance POS security of selected business organisations in Lagos.

Comparing the interpretation of the responses in Table 4 and Table 2 clearly shows that POS security has a positive relationship with adoption of POS of selected business organisations in Lagos.

**Table 5.** Pearson Product Correlation for POS security.

		Adoption of POS in an Organisation	POS security
Adoption of POS in Organisation	Pearson Correlation	1	.437**
	Sig. (2-tailed)		.000
	N	1587	1587
POS security	Pearson Correlation	.437**	1
	Sig. (2-tailed)	.000	
	N	1587	1587

Correlation is significant at the 0.01 level (2-tailed). Source: Field survey, 2016

Table 5 shows the significant relationship between POS security and adoption of POS in an organisation. The correlation coefficient ( $r$ ) of security of POS to adoption of POS in an organisation is .437 and the significance level is 0.01 ( $p < .01$ ). The null hypothesis was therefore rejected concluding that POS security has a positive and significant relationship on adoption of POS of selected business organisations in Lagos.

## 6. Conclusions and Recommendation

Based on the research analysis, hypotheses testing and interpretation of results it was observed that awareness creation and POS security has positive relationship with the adoption of POS of selected SMEs in Lagos state.

### 6.1. Conclusion

In conclusion the result of the analysis of this study shows the importance of the adoption of POS of selected SMEs in Lagos state. Aside stressing the importance of awareness creation which was identified as an important element of the requirements for adoption of POS of selected SMEs in Lagos state, adequate security must be provided. The choice of POS which is a device for electronic payments systems was also to reduce the risk involved in carrying cash and the attendant consequences. So also is the reduction of cost of cash printings.

### 6.2. Recommendations

The result of the analysis of this study shows the importance of the adoption of POS of selected business organisations in Lagos state. The importance of consumer motivation as a panacea for adoption of POS cannot be overemphasized and therefore the following recommendations are made based on findings in this study.

Operators are encouraged to keep improving on the security of POS as this is found to have a positive and significant relationship with adoption of POS. This will engender customers' confidence in the use of POS.

It is recommended to operators and other stakeholders in this sector to ensure that users are motivated to adopt POS. This can be done by ensuring the cost of deployment is put at minimal level hence motivates based on costs. Similarly, adequate enlightenment be made on its usefulness and ease of use as this would motivates or encourage its adoption. Looking at the benefits attributable to POS adoption by merchants which includes holding less cash and hence reducing hazards involving cash carrying it is recommended that adopters becomes markers of the technology to other non SMEs yet to embrace the technology to encourage them to adopt the technology and share in the benefits.

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