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Electronic Fraud and Sustainability of Point of Sales (POS) Services: A Study of Awka Metropolis, Anambra State, Nigeria

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Abstract: *The study set out to examine the effect of electronic fraud on sustainability of POS services in Awka Metropolis, Anambra State. In so doing, descriptive survey research design was adopted. From a population of 3,791 registered/licensed interactive kiosks that engage in POS operations in Awka Metropolis, a sample of 362 was derived using Taro Yamani's statistical formula for determining sample size. The instrument of data collection was structured questionnaire, which was designed using five (5) point Likert scale. Data from the study were analyzed using descriptive statistics and formulated hypotheses were tested using Pearson Correlation and multiple regression analyses. Major findings of the study suggest that unauthorized transactions, agent collusion and POS terminal hacking have significant negative effect on sustainability of POS services in Awka Metropolis, Anambra State. The study concluded that various forms of electronic fraud, including the unauthorized transactions, agent collusion and POS terminal hacking pose serious threats on sustainability of POS services in the area. It was recommended amongst others that implementation of advanced security measures, such as encryption, tokenization and secure authentication protocols will minimize the incidence of electronic fraud amongst POS operators in Awka Metropolis, Anambra State.*

Keywords: electronic fraud, point of sales (POS), electronic payment systems, cyber security, POS terminal hacking.

INTRODUCTION

The rise of electronic payment systems, particularly Point of Sales (POS) services, has revolutionized the way businesses generally operate in Nigeria, especially the small scale businesses. However, this growth has also been accompanied by an increase in electronic fraud,

which poses significant threat to the sustainability of POS services (CBN, 2020). Electronic fraud, including unauthorized transactions, agent collusion and POS terminal hacking, can result in significant financial losses for both individuals and businesses (Albrecht, Albrecht and Albrecht, 2012). Moreover, the prevalence of electronic fraud can erode customer trust and confidence in POS services, ultimately affecting the sustainability. Agu, Simon and Onwuka, (2015) suggest that Point of Sale (POS) terminal has emerged as a promising new application of the next generation e-payment system. The Nigerian payment system that is cash driven has not been able to guarantee the much needed efficient and effective payment platforms required for sustainable economic development.

In the opinion of Williams, Olalekan and Timothy (2018), the implementation of Point of Sale (POS) systems in Nigeria is seen as a means of transiting from cash-oriented payment system to cashless economy. However, they quickly observe 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 customers' accounts through false authentication and breaches in data transaction. This lack of security, raises concern about the privacy and security of personal information, which affect user confidence in the system's ability to securely complete transactions. According to the Nigerian Interbank Settlement System (NIBSS), electronic frauds result in losses of over ₦5 billion in 2020 alone (NIBSS, 2020).

The sustainability of POS services in Nigeria is therefore threatened by electronic fraud, which can obviously erode customers' trust and confidence in POS services thereby negatively affect their adoption and usage. Furthermore, electronic fraud can result in significant or huge financial losses for both businesses and individuals, which can impact the viability of POS services (CBN, 2020). The severity of electronic fraud has compelled a huge proportion of the population to decide not to get involved in electronic banking, which has made banking experience a great delight by offering many channels/platforms that have taken banking beyond traditional branch locations and normal banking hours (Iluno, Farouls and Saheed, 2018).

Awka metropolis, the capital city of Anambra State, is a major commercial hub in South-East, Nigeria. The city has experienced rapid growth in recent years, driven mainly by increasing economic activities, presence of higher institutions of learning and urbanization. However, this growth has also been accompanied by an increase in electronic fraud, which poses a significant threat to the sustainability of POS services in the city.

Increasing adoption of point of sale (POS) services in Awka Metropolis, Anambra State, has been accompanied by a rising incidence of electronic fraud, which appears to be threatening the sustainability of POS services in the area. Adebimpe (2020) observes that electronic fraud in POS services is significantly discouraging the banking public from patronizing the POS agents. The problem, according to him, is so rampant that no rational person would want to be fully involved in it. There is insufficient empirical evidence on prevalence, impact and management of electronic fraud in POS services. This knowledge gap hinders the development of effective strategies to mitigate electronic fraud and ensure sustainability of POS services in Nigeria. This study thus investigates electronic fraud and sustainability of point of sales (pos) services in Awka metropolis, Anambra state

Objectives of the Study

The broad objective of the study is to investigate the effect of electronic fraud on sustainability of POS services in Awka Metropolis, Anambra State. The specific objectives are to:

(i) Examine the effect of unauthorized transaction on sustainability of POS services in Awka Metropolis, Anambra State.

(ii) Evaluate the effect of agent collusion on sustainability of POS services in Awka Metropolis, Anambra State.

(iii) Determine the effect of POS terminal hacking on sustainability of POS services in Awka Metropolis, Anambra State.

Research Questions

The following research questions were raised to guide the study:

(i) What is the effect of unauthorized transaction on sustainability of POS services in Awka Metropolis, Anambra State?

(ii) How does agent collusion affect the sustainability of POS services in Awka Metropolis, Anambra State?

(iii) What is the effect of POS terminal hacking on sustainability of POS services in Awka Metropolis, Anambra State?

Research Hypotheses

(i) Unauthorized transaction does not have positive significant effect on sustainability of POS services in Awka Metropolis, Anambra State?

(ii) Agent collusion does not have positive significant effect on sustainability of POS services in Awka Metropolis, Anambra State?

(iii) POS terminal hacking does not have positive significant effect on sustainability of POS services in Awka Metropolis, Anambra State?

Significance of the Study

The study has both theoretical and empirical significance. From the theoretical significance perspective, the existing stock of literature would be enriched thereby expanding the frontiers of knowledge in the area. On the other hand, the empirical significance stems from the fact that certain categories of people would benefit from the findings of the study. Prominent amongst the beneficiaries are the POS agents, the POS users, Nigeria financial system policy makers and Nigeria legal system. More so the study will be of benefit to students and researchers alike.

Scope of the Study

The study examined the effect of electronic fraud on sustainability of POS services in Awka Metropolis of Anambra State. The independent variable is electronic fraud while the dependent variable is sustainability of POS services. The proxies for independent variable are

unauthorized transactions, agent collusion and POS terminal hacking, which are proposed to affect sustainability of POS services.

Conceptual Review

POS Services: A POS system is a computerized system used to process sales transactions, manage inventory and track customer information (O'Brien, 2005). To Ngai and Gunasekaran (2004) POS services refer to the provision of electronic payment processing services at the point of sale, enabling customers to make payments using various payment instruments such as cards, mobile wallets and others. Hence, POS system refers to a combination of hardware and software used to manage sales transactions, process payments and track inventory in real-time. The device is an electronic used to process transactions and manage sales at the point of sale, typically consisting of a combination of hardware components such as a terminal, scanner, printer and card reader (Turban, Mclean and Wetherbe, 2018). Agogbua, Umeaniba and Mgbatogu (2024) aver that the Nigerian digital economy has been advanced by financial services technology (FINTECH). This is any application, software or technology that allows people or businesses to digitally access, manage or gain insights into their finances or make financial transactions. It offers numerous services such as mobile payments and digital wallets. Ibanichuka and Oko (2019) add that queues and delays in banks make customers to advocate for replacement of physical cash and introduction of more flexible, efficient and cost effective retail payment solutions.

Unauthorized Transactions: Unauthorized transactions refer to transactions that are initiated or performed without the knowledge, consent or authority of the account holder or cardholder (Srivastava, 2015). Similarly, unauthorized financial transactions are transactions conducted without explicit consent of the account holder, resulting in unauthorized access to account holder's financial resources (Alanezi, 2018). Unauthorized card transaction refers to a situation where a card is used without the cardholder's permission, resulting in a financial loss to the cardholder or the issuer (Kaplan, 2017).

Agent Collusion: Agent collusion refers to the cooperative behavior between a POS agent and an external entity to deceive or manipulate the principal, resulting in financial or reputational harm (Lee, 2020). It can also be defined as a situation where an agent entrusted with managing or overseeing a principal's assets or interests, secretly cooperates with another party to commit fraudulent or unauthorized acts, often resulting in financial losses or other harm to the principal (Singh, 2022). According to Kumar (2020), agent collusion in financial services refers to the intentional collaboration between a financial institution's agent and an external entity to commit fraudulent activities such as identity theft, phishing or account takeover.

Terminal Hacking: POS terminal hacking refers to the unauthorized access, manipulation or control of point-of-sale terminals, often using malware or other exploits, to steal sensitive payment card data, personal identifiable information or other valuable data (TuptukandHailes, 2018). In a related definition, Alabdan (2020) observes that POS malware attacks involve the use of malicious software to compromise point-of-sale terminals, allowing attackers to capture and transmit sensitive payment card data, often without the knowledge or consent of the merchant or customers.

Electronic Fraud: Electronic fraud refers to the use of electronic communication networks, such as the internet, to commit fraudulent activities, including identity theft, phishing, online scams and unauthorized access to financial systems (Abawajy, 2014). PwC (2019) notes that cyber fraud involves the use of digital technologies, such as computers, smart phones and networks to deceive, manipulate or exploit individuals or organizations for financial gain. PwC observes that electronic fraud comes in forms and styles with a common intention of dispossessing customers of their financial resources.

Sustainability of POS Services: Sustainability of POS services refers to the ability of the service to meet the present needs of stakeholders, including merchants, customers and financial institutions, while ensuring the long-term viability and resilience of the POS ecosystem, in terms of economic, social and environmental impacts (Lyytinen, 2020). To Kushwaha (2022), it involves the design, development and deployment of point-of-sale systems that minimize environmental harm, promote social responsibility and ensure economic viability, while meeting the evolving needs of stakeholders in the digital payment ecosystem.

Theoretical Framework

The theory upon which the study was anchored is the Technology Acceptance Model (TAM) developed by Fred D. Davis in 1989. The model explains how users form attitudes and intentions to use technology. TAM posits that two primary factors influence technology adoption and they are perceived usefulness (PU), which is the degree to which a user believes that using the technology will improve his performance, the other factor is perceived ease of use (PEU), which is the degree to which a user believes that using technology will be effortless.

The components of TAM include the following:

1. External Variables: Factors outside the user's control, which are system features, training and organizational support.
2. Perceived Usefulness (PU): This element is influenced by external variables, PU affects attitude toward using the technology.
3. Perceived Ease of Use (PEU): It is also influenced by external variables, PEU affects attitude towards using the technology.
4. Attitude toward Using (ATU): A user's positive or negative feelings toward using the technology.
5. Behavioral Intention (BI): A user's intention to use the technology.
6. Actual Use (AU): The actual usage of the technology.

Relevance of the Theory to the Study

Digitization and technology are part of the e-payment system. The scope of this study is limited to how electronic fraud affects the sustainability of POS services in Awka Metropolis, Anambra State. Electronic fraud and POS services are technology driven especially the information and communication technology (ICT). The perceived usefulness (PU) and perceived ease of use (PEU) of internet technology are some of the drivers of the cashless economy and e-commerce. Thus the framework of technology acceptance model (TAM) is relevant in explaining electronic fraud and sustainability of POS services.

Theoretical Exposition

Electronic Fraud and Sustainability of POS Services: Electronic fraud, which many a time results in significant financial losses for POS service providers can actually lead to non-sustainability of the POS services (Abawajy, 2014). This is so because repeated instances of electronic fraud can erode customer trust in POS services, leading to reduced adoption and usage (Liao, 2019). The inconveniencies that accompany it include declined transactions, account freezes and identity theft (Singh, 2022). The fraud can equally lead to reputation damage of the merchant who uses POS services thereby leading to loss of business and revenue (Alabdan, 2020). On environmental impact, the need for frequent hardware and software upgrades to combat electronic fraud can contribute to electronic waste and environmental pollution (Kushwaha, 2022).

Empirical Review

Obi (2023) investigated impact of criminal acts on Point of Sale (POS) business operations in Karu Local Government Area of Nasarawa State. The study adopted descriptive survey design. A sample of 20 outlets was used in the study and the results of the analyses indicate that criminal elements tamper with the operations of the agents, which causes customers to lose their financial resources. The study concluded that strengthening the rules and regulations that guide the operations of POS services will save the situation significantly.

Nwangwu (2024) carried out a study on Point of Sale (POS) business and unemployment reduction in Awka, Anambra State. The study adopted cross-sectional research design. From a population of 2,540 registered POS operators in Awka South L.G.A, a sample of 400 was determined through the application of Taro Yamani's formula. Major statistical tools of analysis used were Pearson correlation and simple linear regression analysis. The Findings suggest that Table based POS business positively reduced the level of unemployment in the area of study. It was concluded that expansion in the number of POS operators would reduce the volume of unemployment further.

Adekunle (2019) studied point of sale (POS) security; threats and counter-measures in Ibadan, Oyo State Nigeria. The study which was designed as a descriptive survey highlighted the importance of encryption, access control, and regular software updates. The statistical tool of analysis was Pearson correlation. The study concludes that effective counter-measures to electronic fraud in POS business can provide some level of safety to customers. Liao (2019) did a study on the effect of unauthorized transaction on sustainability of POS services. The study made use of descriptive survey design. Findings suggest that unauthorized transactions have significant negative effects on sustainability of POS business. It was concluded that effective cyber security measures will minimize electronic fraud in POS business.

In a similar study, Alshammari (2020) investigated the effect of electronic fraud in POS services in Punjab, India. The study which adopted cross sectional design was able to identify common types of electronic fraud in POS services among which are agent collusion and terminal hacking. The study used multiple regressions as tool of analysis and found that both agent collusion and terminal hacking as part of electronic fraud have serious negative effects on sustainability of POS business. It was concluded that implementation of robust security measures, including regular software upgrades will reduce electronic fraud in POS business.

METHODOLOGY

The study adopted descriptive research design. Data for the study was collected from a sample of 362, derived from population of 3,791 registered/ licensed interactive kiosks that engage in POS operations in Awka metropolis. Structured questionnaire was the instrument of data collection, designed using five Likert scale. The questionnaire was completed and returned showing a response rate of 88.7%. Data collected from the study were analyzed using descriptive statistics and hypotheses formulated were tested using Pearson correlation and multiple regression analyses. All tests were conducted at 0.05 level of significance.

Model Specification

The functional relationship between the dependent and independent variables were specified as follows:

SPS = f(UT, AC, PTH) (1)

Specifying equation (1) econometrically, we have:

SPS == $\alpha_o + \alpha_1 UT + \alpha_2 AC + \alpha_3 PTH + \mu_t$ (2)

Where:

SPS = Sustainability of POS Services
α_o = The intercept
μ_t = Stochastic error margin or white noise
UT = Unauthorized transaction
AC = Agent Collusion
PTH = POS terminal hacking

$\alpha_{i's}$are the coefficients of the proxies for the independent variables. The expected signs or a priori for the coefficients are as follows:

$\alpha_1 < 0$, $\alpha_2 < 0$ and $\alpha_3 < 0$,

Thus showing that negative relationships are expected between the dependent and independent variables.

Decision Rule

Correlation: **P-value:** If the p-value is less than 0.05, the chosen significance level, correlation coefficient is statistically significant.

Regression Analysis

F-Statistic: if the F-Statistic is significant (P-value < 0.05), the regression model is statistically significant and therefore a good fit for the data.

Regression Coefficient (β): If the coefficient is statistically significant (p-value < 0.05), and positive, it indicates a positive relationship between the dependent and independent variables.

Data Presentation and Analysis

Table 1: Correlation Analysis

Correlation Matrix

Variables		Sustainability of POS Services	Unauthorized transaction	Agent Collusion	POS terminal hacking
Sustainability of POS Services	Pearson Correlation	1	-.697**	-.507**	-.701**
	Sig. (2-tailed)		.000	.000	.000
	N	321	321	321	321
Unauthorized transaction	Pearson Correlation	-.697**	1	435**	.393*
	Sig. (2-tailed)	.000		.012	.020
	N	321	321	321	321
Agent Collusion	Pearson Correlation	-.507**	.435**	1	.211*
	Sig. (2-tailed)	.000	.012		.001
	N	321	321	321	321
POS terminal hacking	Pearson Correlation	-.701**	.393**	.211*	1
	Sig. (2-tailed)	.000	.020	.001	
	N	321	321	321	321

** Correlation is significant at 0.05 level (2-tailed).
* Correlation is significant at 0.01 level (2-tailed).

The results of correlation matrix presented in table 1 show that strong negative relationships exist between the dependent variable and proxies for the independent variable. However, the relationships among the proxies for the independent variable are positive but weak. Nevertheless, the results did not present any conditions of multicollinearity or orthogonal relationship.

Table 2: Summary of Analysis of Variance (ANOVA) Results of the Model

ANOVA[b]

Source of Variation	Df	Sum of Squares	Mean Square	F-ratio	Sig.
Regression	4	169.708	42.427	21.385	.000[a]
Residual	70	138.905	1.984		
Total	74	308.613			

a. Predictor: (constant), unauthorized transactions, agent collusion and POS terminal hacking.
b. Dependent Variable: Sustainability of POS Service.

The results in Table 2 show that F-Statistic of 21.385 is statistically significant because $P_{0.000}$ is less than $P < 0.05$. Consequently, the model is fit and valid for predictions.

Table 3: Summary of Regression Results

Model	R	R^2	Adjusted R-Square	Standard Error of the Estimate	Durbin Watson Stat.
I	0.509	0.501	.425	.39115	2.205

a. Predictor: (constant), unauthorized transactions, agent collusion and POS terminal hacking.

The regression results presented in table 3 shows that regression coefficient represented by 'R' in the table with a value of .509 is an indication that 50.9 percent relationship exists between the dependent and independent variables. Similarly, the coefficient of determination represented by 'R^2' in the table with a value of .501 shows that 50.1 percent variation in the dependent variable can be explained by the proxies of independent variable.

Table 4: Summary of Regression Coefficients, t-values and Significance Levels

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
1(Constant)	.179	.403	-	-.607	.462
Unauthorized transactions	.403	.081	-.629	10.133	.000
Agent Collusion	.521	.052	-.556	3.520	.000
POS terminal hacking	.593	.043	-.611	2.411	.011

a. Dependent Variable: Sustainability of POS services

Test of Hypotheses

1. H_O: Unauthorized transaction does not have significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

   H_1: Unauthorized transaction has significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

Accordingly, the coefficient of unauthorized transaction represented by α_1 in the model with a value of -.629 in Table 3.4 shows that when the variable is increased by one unit, sustainability of POS services will decrease by 62.9 percent if other variables in the model are held constant. The t-value of 10.133 and its corresponding significant level of .000 are indications that the coefficient is significant but in the negative because $P_{0.000}$ is less than P0.05. Consequently, the null hypothesis was rejected while the alternate which suggest that unauthorized transaction has significant negative effect on sustainability of POS services in Awka metropolis, Anambra State was accepted.

2. H_O: Agent collusion does not have significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

H_1: Agent collusion has significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

Accordingly, the coefficient of agent collusion represented by α_2 in the model with a value of -.556 in Table 3.4 shows that when the variable is increased by one unit, sustainability of POS services will decrease by 55.6 percent when other variables in the model are held constant. The t-value of 3.520 and its corresponding significance level of .000 shows that the coefficient is significant but negative because $P_{0.000}$ is less than $P < 0.05$. Therefore, the null hypotheses were rejected while the alternative which suggests that agent collusion has significant and negative effect on sustainability of POS services in Awka metropolis, Anambra State was accepted.

3. H_O: POS terminal hacking does not have significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

H_1: POS terminal hacking has significant effect on sustainability of POS services in Awka Metropolis, Anambra State.

Accordingly, the coefficient of POS terminal hacking represented by α_3 in the model with a value of -.611 in Table 3.4 shows that when the variable is increased by one unit, sustainability of POS services will decrease by 61.1 percent if other factors in the model are not allowed to vary. The t-value of 2.411 and its corresponding significance level of .011 are indications that the coefficient is significant but in the negative because $P_{0.011}$ is less than $P < 0.05$. Consequently, the null hypothesis was rejected while the alternative which suggests that POS terminal hacking has significant but negative effect on sustainability of POS services in Awka Metropolis was accepted.

Discussion of Research Results and Gap in Literature

Unauthorized transactions have significant but negative effect on sustainability of POS services in Awka Metropolis, Anambra State. The result is consistent with that of Alshamari (2020) when he found from his study that unauthorized transaction was one of the electronic frauds that have negative effect on sustainability of POS services. Unauthorized transaction leads to loss of customer trust, financial losses, increased operational costs, security upgrades and investments, among other negative consequences. However, by understanding these negative impacts, POS service providers can prioritize security and implement effective risk management strategies to ensure long-term sustainability of POS services.

Agent collusion has significant negative effect on sustainability of POS services in Awka Metropolis, Anambra State. The finding supports Oladejo (2020), when he found from his study on sustainability of mobile payment system and POS adoption that agent collusion is one of the factors that limit sustainability of POS services in Nigeria. Agent collusion increases the risk of fraudulent transactions, which can lead to a higher risk profile for POS services, making it challenging for financial institutions to manage risk. Prevalence of agent collusion will automatically make it less attractive for merchants to adopt POS services thereby limiting the growth of the payment eco-system.

POS terminal hacking has significant negative effect on sustainability of POS services in Awka Metropolis, Anambra State. Again, this finding is in line with the result of Adekunle (2019)

when he found that POS terminal hacking as one of the elements of electronic fraud in POS services has significant negative effect on sustainability of POS services. Dealing with the consequences of POS terminal hacking can lead to increased operational costs, such as more expenses on security measures, loss of customer support and legal issues.

FINDINGS OF THE STUDY

1. Unauthorized transaction has significant negative effect on sustainability of POS services in Awka metropolis, Anambra state.
2. Agent collusion has significant negative effect on sustainability of POS services in Awka metropolis, Anambra state.
3. POS terminal hacking has significant negative effect on sustainability of POS services in Awka metropolis, Anambra state.

CONCLUSION

The study examined the effect of electronic fraud on sustainability of POS services in Awka Metropolis, Anambra State. Findings suggest that various forms of electronic fraud, including unauthorized transaction, agent collusion and POS terminal hacking, pose significant threats to sustainability of POS services in the area. These fraudulent activities can lead to financial losses, erosion of customer trust, regulatory non-compliance, reputational damage and increased operational costs. The study thus concludes that electronic fraud can undermine the growth and sustainability of POS services in Awka Metropolis, Anambra State.

Recommendations

1. Implementation of advanced security measures, such as encryption, tokenization and secured authentication protocols if fully adopted can curb unauthorized POS transactions.
2. Enhancement of customer awareness and education on electronic fraud prevention and detection will reduce the incidence of agent collusion in POS services.
3. Conducting of regular security audits and penetration testing to identify vulnerability can curb the incidence of POS terminal hacking among the operators.

REFERENCES

Abawajy, J. (2014). User preference of decomposed TP2 of malicious transaction detection.*IEEE Transactions on Information Forensics and Security*, 9(12): 2056- 2067.

Adebimpe, O. (2020). Point of Sale (POS) fraud: A review of the Nigerian experience. *Journal of Financial Crime*, 27(3): 739 – 755.

Adekunle, A.A. (2019). Point of Sale (POS) Security: a study of threats and countermeasures. *International Journal of Cyber security Intelligence and Cyber forensics*, 3(1): 1 – 12.

Agogbua, S. N, Umeaniba, A.I. and Mgbatogu, C.D. (2024). Nigeria Start-Up Act, 2022 Disruption on Financial Services Technology Startups (FINTECH): A Study of Moniepoint (Point of Sales) POS Agents in Anambra State. International Journal of Small Business and Entrepreneurship Research, Vol. 12 No 2, pp. 59-71.

Agu, B.O., Simon, N. P. N. and Onwuka, I. O. (2015).Point of Sale (POS)-Adoption and Challenges in Nigeria. International Journal of Social Science and Economic Research, Volume 02, Issue 02.

Alabdan, M. (2020). POS malware attacks: A systematic review. *Journal of Information Security and Applications*, 50: 102503.

Alanezi, F. (2018).Security and Privacy in Internet of Things.IGT Global.

Albrecht, W. S., Albrecht, C. C. and Albrecht, C. O. (2012). Fraud Examination, Cengage Learning.

Alshammari, M. (2020). Electronic fraud in Point of Sale (POS) systems: A systematic review. *IEEE Access*, 8: 123456 – 123471.

CBN (2020). 2020 Central Bank of Nigeria (CBN) Annual Report.

Davies, F. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology, MIS Quarterly, 13: 319-340.

Ibanichuka, E. A. L. and Oko, I. A. (April 2019). Electronic Fraud and Financial Performance of Quoted Commercial Banks in Nigeria.International Journal of Advanced Academic Research | Management Practice, Vol.5, Issue 4

Iluno, E.C., Faruk, B.K.U. and Saheed, Z.S. (2018). Impact of the electronic banking products and services on customers' satisfaction: a study of Kaduna State, Nigeria. *Journal of Good Governance and Sustainable Development in Africa (JGGSDA)*, 4(2): 21 – 33.

Kaplan, J (2017). Payment System and Financial Mediation, Rocittadge.

Kumar, N. (2020). Collusive Bahaviour in Principal-Agent Relationships, Journal of Business Ethics, 16(2), 257-273.

Kushwaha, G. (2022). *Sustainable point of sale systems: A systematic review. Sustainability*, 14(11): 6231.

Laudon, K.C. and Laudon, J.P. (2016).*Management Information System*.Pearson Education.

Lee, S. (2020). Detecting Agent Collusion in Electronic Commerce, Journal of Management Information Systems, 37(2): 432-455.

Liao, Y. (2019). The impact of electronic fraud (unauthorized transactions) on customer trust in POS services.*Journal of Business Research*, 99: 241 – 249.

Lyytinen, K. (2020). Sustainable digital innovations: An analysis of Point-of-Sale System. *Journal of Business Research*, 106: 142 – 153.

Ngai, E.W. and Gunasekaran, A. (2004).*Implementation of EDI in SMEs. Industrial Management & Data Systems*, 104 (516): 332 – 346.

NIBSS (2020). 2020 Nigeria Interbank Settlement System (NIBSS) Annual Report.

Nwangwu, C.J. (2024). Point of Sale (POS) business and unemployment reduction in Awka, Anambra State.*Journal of Emerging Trends in Management Sciences and Entrepreneurship*, 6(1): 129 – 146.

O'Brien, J.A. (2005). *Introduction to information system*.McGraw-Hill.

Obasi, I.N. (2000). Research methods in political science. In Ejike, D.C. (ed.). The role of developing entrepreneurial competencies in small business management in Anambra State.*International Journal of Business and Management*, 2(4): 129 – 138.

Obi, E.N. (2023).Impact of criminal acts on Point of Sale (POS) business operations in Karu Local Government Area of Nasarawa State, Nigeria.*NIU Journal of Social Sciences*, 9(2): 119 – 127.

Oladejo, O.A. (2020). Sustainability of mobile payment system in Nigeria: A study of POS adoption. *Journal of Mobile Technology, Applications and Systems*, 5(1): 1 – 18.

PwC (2019).Global economic crime and fraud survey.*PwC Global Economic Crime and Fraud Survey*.

Sing, F. (2022). Agent Collusion in Financial Services, A Systematic Review, Journal of Financial Regulation and Compliance, 30(1): 34-51.

Srivastava, S. G. (2015). Cyber Security in Financial Services, Springer.

Tuptuk, N. and Hailes, S. (2018). POS terminal hacking: A growing threat to payment card security. *Journal of Cyber security*, 4(1): 1 – 14.

Turban, E., Mclean, E.R. andWetherbe, J. (2018).*Electronic commerce: A managerial perspective*. Springer Nature.

Williams, O. A., Olalekan, A. and Timothy, A. S. (2018). Consumer Trust and Adoption of Sales of Selected Business Organizations in Lagos State, Nigeria, International Journal of Applied Science, Research and Review, 5 (2): 135-143.