
**A Strategic Assessment of the Retail Point of Sale Common Frauds:
An Empirical Study of the Modern Methods of Prevention and Detection**

Sakiru Abiola LAWAL, *Ph.D*
Department of Banking and Finance
Lagos State Polytechnic

ABSTRACT

The study empirically examined modern methods of prevention and detection of Retail Point of Sale Common Frauds. Five specific objectives, research questions and one null hypothesis was formulated to guide the study. The study adopted a descriptive survey design and the study was undertaken in Nigeria. The population of the study consisted of bankers and POS operators in Nigeria. A stratified sampling technique was used in selecting 300 respondents (made up of 150 bankers and 150 POS operators) selected from three out of six geographical zones in Nigeria. The instrument, titled "Modern Methods of Prevention and Detection of Retail Point of Sale Common Frauds Questionnaire (MMPDRPOSCFQ)", was used for data collection. Face and content validation of the instrument was carried out by an expert in banking and finance to ensure that the instrument was recorded with accuracy while the Cronbach Alpha technique was used to determine the level of reliability of the instrument. Interestingly, the reliability coefficient obtained was 0.86, which was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as percentage analysis in answering the research questions and simple regression analysis in testing the hypothesis. The test for significance was done at a 0.05 alpha level. Based on the results, the study concluded that there is significant impact of fraud prevention and detection on economic development. One of the recommendations made was that POS business operators should establish a work ethics unit; reduce excessive confidence in employees; and emphasise leadership by example in order to promote continuity of operations within the organisation.

KEYWORDS: Retail Point of Sale, Frauds Modern Methods of Prevention and Detection

Introduction

In today's business environment, security is a central and increasingly significant problem (Kanniainen, 2010). The frequency of fraudulent transactions perpetrated by third parties has increased dramatically in recent years. As a result, fraud prevention has become a top priority for businesses, banks, customers, and government officials (Sullivan, 2010). However, modern fraud prevention and detection strategies are essential to academic studies because fraud has a detrimental influence on organisations, such as retail points of sale and the quality and loyalty of their customers.

Customers and business owners are both unexceptional from business fraud. By refunding consumers' monetary losses, many retail point-of-sale businesses incur significant operating costs (Gates and Jacob, 2009), while customers suffer significant time and emotional losses. They must detect fraudulent transactions, report them to their bank, request the barring

and re-issuance or re-opening of a card or account, and contest compensation of their financial losses (Malphrus, 2009). Customers' perceptions of feeling unsafe and unprotected at their bank may be influenced by becoming a fraud victim. As a result of the broken trust and confidence, fraud may damage the POS-customer relationship, as well as raise discontent due to a perceived service failure (Krummeck, 2010; Varela-Neira et al., 2010). This, in turn, may have a detrimental impact on customer loyalty and encourage switching behaviour (Gruber, 2011), thereby damaging the business owner's reputation and making it difficult to attract new customers (Buchanan, 2010).

Fraud prevention and detection may thus provide opportunities for businesses to improve their consumer relationships. It allows business owners to reassure their customers' trust in their services (Guardian Analytics, 2011). Indeed, the sense of security that comes with it may be an efficient strategy to keep existing customers and attract new ones (Behram, 2005). POS owners should, however, demonstrate their knowledge and competence in fraud prevention and detection by properly executing anti-fraud measures for customers (Rauyruen and Miller, 2007). This sense of security is likely to boost the quality of customer relationships and customer loyalty, both of which are critical success criteria in the highly competitive business environment (Alexander and Colgate, 2010).

Statement of Problem

Fraud is the most common trait facing business owners in today's business environment. Approximately 65% of fraud relates to the misappropriation of business assets (Omar, Nawawi, & Puteh-Salin, 2016). The general business problem is that fraud affects both small and medium retail business owners resulting in financial loss. The specific business problem is that some small retail business owners lack strategies to detect and prevent fraud, while others might try to but fail on the way. It is on this prejudices that this study is conducted to strategically assess the retail point of sale common frauds and the modern methods of prevention and detection.

Objectives of the Study

1. Find out the types of retail point of sale systems adopted in Nigeria
2. Examine the types of retail point of sale common frauds in Nigeria
3. Determine the modern fraud prevention methods used in mitigating retail POS frauds in Nigeria
4. Assess the modern fraud detection methods used in mitigating retail POS frauds in Nigeria
5. Ascertain the impact of fraud prevention and detection on economic development

Research Questions

1. What are the types of retail point of sale system adopted in Nigeria?
2. What are the types of retail point of sale common frauds in Nigeria?

3. What are the modern fraud prevention methods used in mitigating retail POS frauds in Nigeria?
4. What are the Modern Fraud Detection Methods used in mitigating retail POS frauds in Nigeria?

Research Hypothesis

There is no significant impact of fraud prevention and detection on economic development.

Conceptual Review

Concept of Retail Point of Sale and Types

The point of sale (POS) is the location where customers pay for their purchases. A retail POS system is a centralised solution for managing all retail activities in an organisational setting. In general, retail point-of-sale systems are classified according to the industry they serve. Because there are so many various types of merchants, it's only natural that there be so many distinct types of retail POS systems. POS systems are frequently integrated into industry-specific platforms. For hotels, for instance, POS functionality is included in their hotel management software. These platforms will be able to do much more than merely collect payments from customers; but POS functionality will be an essential aspect of running a hotel. In many cases, standalone retail POS systems can be employed by any business owner. While different sectors may have unique requirements, most retail POS systems are adaptable enough to be utilised by any retailer.

Desktop POS System: This type of system uses an app, browser, or an on-premises system to function on a PC or laptop. It has a cash drawer, a barcode scanner, and a card swiper, so it functions similarly to a traditional cash register. However, businesses like restaurants, grocery shops, fashion stores, book stores, salons and spas, and other companies with high volumes can benefit from desktop POS.

On-premise POS Systems: On-premise POS, also known as On-site POS, legacy POS, counter POS, or traditional POS, is a type of POS in which all data is stored locally, typically on the computer hard drive. As a result, it may be retrieved whenever the computer is turned on and whenever any information is needed (Pham, 2021).

Mobile POS System: A mobile POS, also known as mPOS or smartphone POS, is a subset of a cloud-based POS system that stores data in the cloud and offers remarkable benefits to business owners who make use of it, such as:

- Ultimate mobility for businesses that are on the go and do not have a lot of inventory, like farmer's markets, craft shows, fairs, and street food;
- Dedicated usage for mobile devices (smartphones, iPad, and Android tablets)
- Much lower cost to purchase and smaller in size.

Mobile POS, however, differs from many other POS systems in that it comprises mostly of a phone app that connects to a card reader. Since it does not take much space, it is highly

competitive with small-scale businesses, for instance, street vendors, fair/event vendors, and freelance workers.

Self-service Kiosk POS Systems: The major goal of this system is to increase operational efficiency while reducing labour costs for businesses. The setup of a self-service kiosk POS is typically comparable to that of a desktop POS, but with additional security features. Therefore, all transactions are one-ended, and risks are prevented (Quinn, 2020).

Omnichannel POS Systems: This kind of POS refers to an all-in-one solution that integrates all business channels such as websites, 3rd-party marketplaces, and social media to ensure efficient and seamless business operations. Some omnichannel POS features are: data centralization; store pickup order processing; reports and analytics; ecommerce integration; management tools (customers, sales, inventory, and employees); and marketing activities (promotions, discounts, and gift cards); customer loyalty programmes (reward points and store credits).

Retail Point of Sale Common Frauds

Fraudsters targeting businesses and consumers are varied and constantly evolving. However, at a high level, there are several categories of point-of-sale scams that retailers and service providers should be aware such as:

Transaction Fraud: Increasingly competitive retailers are facing unprecedented pressure from fraudsters and other forms of online theft. Since every piece of cash collected in retailing businesses is not only for the cost of goods but also for wages, overheads such as rent, and the retailer's gross profit margin, every token lost through fraud must be replaced by the retailers with several amounts of cash in new sales just to get back to break-even. In an already cut-throat marketplace, retail fraud can be crippling.

Chargeback Fraud: Chargeback fraud is one of the most well-known kinds of point-of-sale fraud. Due of the customer's involvement, this sort of fraud is frequently referred to as "friendly fraud" or "first-party fraud." This approach involves a consumer using their credit card to make a genuine purchase for an item or service, then contacting their bank to deny making the payment (Regions Bank, 2020). While a chargeback can also occur when a customer fails to recognise the merchant name on their credit card account and believes they have been the victim of fraud, "friendly fraud" occurs as a result of the customer's intentionally denying the card payment.

Refund Fraud: Customers' cash or credit card refunds are frequently processed by POS operators, which could be fraudulent. Ideally, refunds will be handled separately by a customer service desk rather than by the normal POS cashbox operators. If reimbursements must be made through the POS tills, management approval and a separate total at the end of the day are required. Individual operator reimbursements can be traceable against the operator login code in this way to deter cash theft concealment (Kelly, 2020).

Card Testing Fraud: In addition to the aforementioned risks, retailers and service providers may be exposed to card testing fraud. Card testers use card information to determine whether a stolen credit card is authentic by making copious online payments or minor transactions. In

many cases, bots are frequently used by hackers to test many credit card numbers at once (Regions Bank, 2020). Card testing fraud is generally overlooked until it is too late, since the amount of each individual purchase permitted is often relatively small. Not only may the overall cost of fraudulent transactions and authorisation fees be substantial, but after a card number has been confirmed, fraudsters may proceed to make larger fraudulent purchases using the stolen card.

However, many business owners can end up losing both money and merchandise in each of these cases. That is why it is important to take measures to detect and prevent fraud at point-of-sale before it happens.

Modern Fraud Prevention Methods

Based on the ubiquity of fraud, one of the most successful approaches to combating the problem is to use measures that reduce motive, restrict opportunity, and limit prospective fraudsters' capacity to rationalise their actions. The goal of preventative measures in the case of purposeful fraud is to decrease opportunities and eliminate the temptation for potential perpetrators. However, it is profitable to prevent losses, and fraud prevention activities can help to ensure the stability and continued existence of a business. POS businesses cannot be exempted from this technique as fraud is common in all types of business carried out by people. Prevention techniques include the implementation of policies, procedures, and controls, as well as activities like training and fraud awareness.

Fraud risk training and awareness: Almost every time a major fraud occurs, many individuals who were unintentionally close to it are shocked by the fact that they were completely oblivious of what was going on. As part of the overall risk management plan, it is critical to raise awareness through a structured education and training programme. Particularly, for businesses that operate in high-risk areas, such as procurement and bill paying, as well as those involved in the prevention and detection of fraud, such as human resources and investigators. POS business is not an exemption, and the management should create adequate awareness to the POS users on the common fraudulent activities involved in the business.

Reporting mechanisms and whistleblowing: One of the most important aspects of a fraud prevention is the establishment of effective reporting channels, which can help with fraud detection. Many frauds are known or suspected by people who are not involved. The problem for management is to get these "innocent" employees to speak up—to show that speaking up is in their best interests. According to Katherine Bradshaw's research from 2007, even while one out of every four employees is aware of workplace misconduct, more than half of those persons remain silent (Bradshaw, 2007).

Periodic assessment of fraud risk: In order to manage fraud risk, business owners should periodically identify the risks of fraud within their organization. Fraud risks should be identified for all areas and processes of the business and then be assessed in terms of impact and likelihood. In addition to the monetary impact, the assessment should consider non-financial factors such as reputation. However, if an effective fraud risk assessment is set up, it will help highlight fraud risks previously unidentified and strengthen the ability of the organisation to timely prevent and detect fraud before it occurs (Doody, 2008).

Modern Fraud Detection Methods

As fraud prevention techniques may not stop all potential perpetrators, organisations should ensure that systems are in place that will highlight occurrences of fraud on time. This is achieved through fraud detection. A fraud detection strategy involves the use of analytical and other procedures to highlight anomalies and the introduction of reporting mechanisms that provide for communication of suspected fraudulent acts. However, POS business owners should make sure that these detection techniques are embedded in their business environment as major fraud risk detectors to help protect their business. The key elements of a comprehensive fraud detection system would include exception reporting, data mining, trend analysis, and ongoing risk assessment.

Indicators and warnings: It has never been feasible to eliminate all fraud. No system is completely fraud-proof since many fraudsters can bypass control systems put in place to stop them. However, greater attention paid to some of the most common indicators can provide an early warning that something is not quite right and increase the likelihood that the fraudster will be discovered. This can be of benefit to POS operators who are often vulnerable to fraudsters. Fraud indicators can be categorised as warning signs and fraud alerts, which all can function as fraud detectors.

Tip-off and hotline facilities. A hotline is a single point of contact for staff members (and others) to report information on suspected fraud. It gives people a means of contacting the organisation at minimal personal risk. However, for retail POS operators, tip-off and hotline services can help detect fraud in real time and allow their employees to contact the owners for advice and information on related cases.

Whistleblowing. Whistleblowing refers to the reporting, in the public interest, of fraudulent activity. Whistleblowers are protected by law, and instruments are in place to protect them (Trigueiros, 2016). These instruments provide schemes that give special protection to disclosures made in the public interest about unlawful, negligent, or improper public sector conduct or danger to public health, safety, or the environment.

Data-Mining (post-transactional review). Indicators of fraud, misconduct, and error can, in some cases, be detected through the examination of the transactions produced as part of an organisation's financial and operational activity. The use of data mining and analysis techniques and tools can assist with the identification (Bolton & Hand, 2012).

Impact of Fraud Prevention and Detection on Economic Development

In view of the economic growth in companies' size and complexities, proper management of modern business understandings is not possible unless they have effective prevention and detection methods in reducing fraud risks. Most studies have focused on the impact of fraud prevention and detection methods on economic growth. Fraud has been identified to have a negative impact on investment (Ghalwash 2014), company performance (Sahakyan and Stiegert 2014), firm innovation (Bukari and Anaman, 2020), and economic development (Dreher and Schneider 2010; Blackburn & Powell 2011). Moreover, several studies have provided empirical support for a positive bidirectional relation between economic growth and fraud prevention and detection in developing economies and a negative unidirectional relation

between them in developed countries (Okoye and Gbegi 2013). Consequently, fraud can both damage and sustain economic development.

In a study carried out by Idowu and Adedokun (2013), which examined the effects of monitoring and control activities on fraud detection in selected Nigerian quoted deposit money commercial banks, it was revealed that there is significant relationship between effective and efficient monitoring and fraud detection in Nigerian quoted deposit money commercial banks. In another study conducted by Oguda, Odhiambo, and John (2015), they examined the effect of internal control on fraud detection and prevention in district treasuries of Kakamega county. The study revealed that there was a statistically significant and positive relationship between the adequacy of internal control systems and fraud prevention and detection in district treasuries in Kakamega County. In another development, Kehinde, Felicia, and Joseph (2016) in a study on fraud prevention and internal control in the Nigerian banking system. It was opined that internal control on its own is effective against fraud, but not all staff are committed to it. Furthermore, Hoffmann and Birnbrich (2012) in another study on the impact of fraud prevention on bank-customer relationships in retail banks revealed that there is a positive association between customer familiarity with and knowledge of fraud prevention measures and the quality of customer relationships as measured by satisfaction, trust, and commitment. Customer loyalty is positively associated with the quality of customer relationships, as measured by intentions to continue their relationship with and cross-purchase other products from their bank. However, in all this researches, it can be said that fraud prevention and detection are directly related to the economic development of any business or the country at large.

Methodology

The study adopted a descriptive survey design and the study was undertaken in Nigeria. The population of the study consisted of bankers and POS operators in Nigeria. A stratified sampling technique was used in selecting 300 respondents (made up of 150 bankers and 150 POS operators) selected from three out of six geographical zones in Nigeria. The instrument, titled "Modern Methods of Prevention and Detection of Retail Point of Sale Common Frauds Questionnaire (MMPDRPOSCFQ)", was used for data collection. Face and content validation of the instrument was carried out by an expert in banking and finance to ensure that the instrument was recorded with accuracy while the Cronbach Alpha technique was used to determine the level of reliability of the instrument. Interestingly, the reliability coefficient obtained was 0.86, which was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as percentage analysis in answering the research questions and simple regression analysis in testing the hypothesis. The test for significance was done at a 0.05 alpha level.

Results and Discussion

Research Question 1: The research question sought to find out the types of retail point of sale systems adopted in Nigeria. To answer the research question percentage analysis was performed on the data, (see table 1).

Table 1: Percentage analysis of the types of retail point of sale systems adopted in Nigeria

TYPES	FREQUENCY	PERCENTAGE
Desktop POS System	51	17
On-premise POS Systems	29	9.67
Mobile POS System	168	56**
Self-service Kiosk POS Systems	35	11.67
Omnichannel POS Systems	17	5.67*
TOTAL	300	100%

**** The highest percentage frequency;**

*** The least percentage frequency**

SOURCE: Field survey

From the result of the data analysis, it was observed that "mobile POS systems" 168(56%) was ranked the highest used retail point of sale systems in Nigeria, while "omnichannel POS systems" 17(5.67%), was rated the least used retail point of sale systems by the respondents.

Research Question 2: The research question sought to find out the types of retail point of sale common frauds in Nigeria. To answer the research question percentage analysis was performed on the data, (see table 2).

Table 2: Percentage analysis of the types of retail point of sale common frauds in Nigeria

COMMON FRAUDS	FREQUENCY	PERCENTAGE
Transaction Fraud	93	31
Chargeback Fraud	58	19.33
Refund Fraud	23	7.67*
Card Testing Fraud	126	42**
TOTAL	300	100%

**** The highest percentage frequency;**

*** The least percentage frequency**

SOURCE: Field survey

From the result of the data analysis, it was observed that "card testing fraud" 126(42%) was rated the highest most common retail point of sale fraud, while "refund fraud" 23(7.67%), was rated the least most common retail point of sale fraud in Nigeria by the respondents.

Research Question 3: The research question sought to find out the modern fraud prevention methods used in mitigating retail POS frauds in Nigeria. To answer the research question percentage analysis was performed on the data, (see table 3).

Table 3: Percentage analysis of the modern fraud prevention methods used in mitigating retail POS frauds in Nigeria

MODERN FRAUD PREVENTION METHODS	FREQUENCY	PERCENTAGE
Fraud risk training and awareness	134	44.67**
Reporting mechanisms and whistleblowing	94	31.33
Periodic assessment of fraud risk	72	24*
TOTAL	300	100%

**** The highest percentage frequency;**

*** The least percentage frequency**

SOURCE: Field survey

From the result of the data analysis, it was observed that "fraud risk training and awareness" 134(44.67%) was rated the highest modern fraud prevention methods, seconded by "reporting mechanisms and whistleblowing" 94(31.33%), while "periodic assessment of fraud risk" 72(24%) was rated the least of the modern fraud prevention methods used in mitigating retail POS frauds in Nigeria by the respondents.

Research Question 4: The research question sought to find out the modern fraud detection methods used in mitigating retail POS frauds in Nigeria. To answer the research question percentage analysis was performed on the data, (see table 4).

Table 4: Percentage analysis of the modern fraud detection methods used in mitigating retail POS frauds in Nigeria

MODERN FRAUD DETECTION METHODS	FREQUENCY	PERCENTAGE
Indicators and warnings	90	30
Tip-off and hotline facilities	82	27.33
Whistleblowing	71	23.67
Data-Mining (post-transactional review)	57	19
TOTAL	300	100%

**** The highest percentage frequency;**

*** The least percentage frequency**

SOURCE: Field survey

From the result of the data analysis, it was observed that "indicators and warnings" 90(30%) was rated the highest modern fraud detection methods, seconded by "tip-off and hotline facilities" 82(27.33%), followed by "whistleblowing" 71(23.67%), while "data-mining" 57(19%) was rated the least modern fraud detection methods used in mitigating retail POS frauds in Nigeria by the respondents.

Hypothesis Testing

The null hypothesis states that there is no significant impact of fraud prevention and detection on economic development. In order to test the hypothesis simple regression analysis was performed on the data, (see table 5).

Table 5: Simple Regression Analysis of the impact of fraud prevention and detection on economic development

Model	R	R-Square	Adjusted R Square	Std. error of the Estimate	R Square Change
1	0.76	0.58	0.58	1.09	0.58

***Significant at 0.05 level; df= 298; N= 300; critical R-value = 0.113**

The above table 5 shows that the calculated R-value (0.76) was greater than the critical R-value of 0.113 at 0.05 alpha levels with 298 degrees of freedom. The R-Square value of 0.76 predicts 76% of the impact of fraud prevention and detection on economic development. This rate of percentage is highly positive and therefore means that there is significant impact of fraud prevention and detection on economic development. The result therefore is cognate to the research findings of Oguda, et al. (2015), which stated that adequacy of internal control systems and fraud prevention and detection had a statistical significant and positive impact in

district treasuries in Kakamega County. Accordingly, Kehinde et al. (2016) stated that in the Nigeria, fraud prevention and internal control is effective against fraudulent activities in Nigerian banking system. Hoffmann and Birnbrich (2012) further supported that the impact of fraud prevention on bank-customer relationships in retail banks is positively associated with customer familiarity with and knowledge of fraud prevention measures and the quality of customer relationships such as satisfaction, trust, loyalty, and commitment. However, the significance of the result caused the null hypotheses to be rejected while the alternative was accepted.

Conclusion

The concept of fraud is not new in today's financial and nonfinancial worlds. However, people who are willing to commit fraud do not discriminate. It can happen in large or small companies across various industries and geographic locations. Recent trends have become increasingly important as the incidence of fraud has led to financial crises for many business owners, causing notable damage to the organization's image and their economies, which can ultimately lead to the downfall of an organisation. In the end, a smart thing to do when it comes to retail businesses to succeed is to have the proper plans for fraud prevention and detection. This can significantly reduce fraudulent activities from occurring or cut losses if a fraud has already occurred. Therefore, the study further concluded that there is significant impact of fraud prevention and detection on economic development.

Recommendations

1. POS business operators should establish a work ethics unit; reduce excessive confidence in employees; and emphasise leadership by example in order to promote continuity of operations within the organisation.
2. Most businesses operating in high-risk areas should be encouraged to employ fraud prevention and detection policies such as those mentioned in this article to help reduce fraud risk before it occurs.
3. The government should improve by revisiting the performance of methods such as integrated fraud control, organisational policy, continuous monitoring, inspection tools and methods, as well as protection software and applications, as they will help lower the risk of fraud.

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