# Adoption of Point of Sale Terminals in Nigeria: Assessment of Consumers' Level of Satisfaction

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**Abstract**

The adoption of Point of Sale Terminal for financial transaction is expected to reduce large volume of currency in circulation. However, the adoption of the e-payment system is comparatively lower to other payment systems in Nigeria. The study therefore investigates the level of consumers' satisfaction with adoption of e-payment system in Nigeria. Data for the study were elicited from bank customers and consumers of the product. Overall, the result indicates that fewer consumers were satisfied with the speed of transaction, level of service provided by the merchants, awareness, and security. These findings suggest opportunities for improving the consumers interface with POS technology in order to achieve the objective of cashless economy.

**Key words**: e-payment, point of sale terminals, consumers

## 1. INTRODUCTION

Reliance on cash based economy has been found to be risky and cumbersome 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 (COB) is limited (Adeoti & Oshotimehin 2011). According to Ayo (2009) a greater percentage of problems within the economies of most developing countries are attributable to the cash carrying nature of their economy. This cash carrying character of the economy is also responsible for large pool of money in the hands of the unbanked citizens.

In order to reduce the volume of cash in circulation and reduce the risk of going about with cash, several electronic payment systems such as payment cards (smart card) and paper- based instrument were introduced by financial regulatory body in Nigeria. This has encouraged e-payment initiatives such as the establishment of switching companies that facilitate interconnectivity, introduction of payment instruments such as Automated Teller Machine (ATM), web transaction, e- money products such as credit and debit cards and point of sale (POS) which gave rise to significant growth in the use of electronic payment systems (Salimon 2006).

Generally, electronic payment system (e-Payment) refers to an electronic means of making payments for goods and services procured online or in supermarkets and shopping malls. It enables websites and shopping malls to securely process transactions in real time. It operates on a smartcard that stores information on microchips. The microchip contains a purse in which monetary value is held electronically. The electronic payment system takes the following forms: electronic financial payment system, where payment is through some specified protocols; and (b) smartcard payment system, where the information on the silicon is used to effect payment for services (Ayo 2009; Sumanjeet 2009). This payment system provides a better audit trail than transactions that involve physical cash and thus reduce the amount of currency in circulation.

The adoption of this payment system by the consumers has improved Nigeria's payment landscape. This is evident in terms of volume and value of the level of adoption in the country. The level of this adoption by the consumers has continue to increase significantly and accounted for billions worth of transactions as at 2008 (Adesina & Ayo 2010).   However, despite the general increase in adoption of e-payment instruments, the rate of adoption and use of POS is relatively low when compared to the rest of e-payment system. The level of adoption of e-payment system in Nigeria is shown in Table1.

The usage of ATM transaction continued on the upswing in the review period with the volume and value standing at 49,671 and N285.87 billion, and represented an increase of 162.1 and 99.5 percent, respectively, above the levels in the corresponding period of 2008. According, to CBN (2009) the

increase in the usage of ATMs was attributed to the increase in the facility in the country and the ease as well as convenience of the system.

During the review period, the use of mobile phone for payments increased in volume by 374.0 percent to 7,471,388 and value of N6, 149.2 percent to N10.30 billion (1N=$163). The development reflected the improved mobile teledensity in the country. The first half of 2009 witnessed an increase in the volume and value of on-line POS transactions. At 627,314 and N7.8 billion, POS transactions rose by 17.2 and 15.5 percent respectively, from 535,376 and N6.8 billion in volume and value terms, above the levels in the corresponding half of 2008. According to CBN (2009) the growth in the POS transactions was due to the increase in the number of people and merchants using debit cards.

From the above analysis, it means that ATM remained the most patronized channels accounting for over 80.0 percent of the total e-payment transaction in both volume and value terms. However, despite the general increase in adoption of e-payment instruments, the rate of adoption and use of POS is still relatively low when compared to the rest of e-payment system such as ATM (CBN, 2009). In spite of the low adoption of the POS, its relevance to cash reduction strategy is higher. Point of sale terminal is accessible at merchants and trading store while ATM is not in Nigeria. One possible reason for the low adoption of POS is consumer level of satisfaction with the technology.

Since consumers' adoption and satisfaction are decisive factor, this study was contemplated therefore to gain a deeper understanding of consumer behaviour with special focus on POS Terminals. Studies have examined the determinant of information technology (IT), researchers have made significant efforts in building theories to examine and predict the determinants of (IT) acceptance (Agarwal & Prasad 1998, 1999). Despite the strong and consistent increase in the use of electronic payment methods worldwide, the level of satisfaction of consumers with POS terminals are far from being understood.

As e-payment is increasingly getting more significance in Nigeria's financial transactional activities, investigating customers' satisfaction with electronic payment systems is of great importance to bank managers in order to improve their systems and services and adapt them with their customers' needs. Therefore, e-payment as a fast, convenience and modern means of transactions can be utilized by banks and consumers in order to facilitate payment procedures and consequently increase customers' satisfaction. Studies have shown that less educated people are more reluctant in using electronic payment services as a result of their inconvenience in using internet for doing their transactions (Banstola 2007) and this may eventually impact their level of satisfaction with e-payment services. In other words, people with higher education level are more adaptive to acceptance of e-payment banking systems. Hence, investigating the satisfaction of customers at general level is of great significance to cash based economy of African countries. Considering such importance, this study intends to investigate the level of adoption of point of sale terminals; consumer level of satisfaction with Point of sale terminal and test the null hypothesis that consumer satisfaction does not significantly affect adoption POS terminal in Nigeria. The need to investigate consumer satisfaction for success in any commercial enterprise is obvious. The financial income of all commercial activities is derived from the payments received for the products and services supplied to its customers.

## 2. METHODOLOGY

The study was carried out in Lagos State. The state represents one of the most urbanized zones in Nigeria where electronic payment system is mostly being used. The trend in the volume and value of financial instruments cleared through retail payment system showed that, Lagos, as in the past, led other clearing zones in Nigeria. For instance, the state leads other zones of the country with 64.8 per cent in volume terms and 48.4 per cent in value terms (CBN, 2009). Lagos is Nigeria's financial, commercial and industrial nerve center with over 2,000 manufacturing firms and over 200 financial institutions including the nation's premier stock exchange, the Nigeria Stock Exchange.

Primary data was used for this study. The sampling frame consists of bank customers in Lagos state that operated either savings or current accounts and who usually buy goods and services from business organizations who operate POS facilities. The POS terminal outlets in Lagos state include-super markets, hotels, petrol stations, eateries, airlines, schools, companies and pharmaceutical stores. These establishments accept the use of POS. Multistage sampling technique was used. Five local governments' area of Lagos state where the use of POS is concentrated was purposively selected. This constituted first stage of sampling. Then the consumers were stratified into two: the

first group was bank customers with savings or current account patronizing merchants with POS terminals, while the second group was other electronic payments users such as ATM, electronic fund transfer, mobile phones etc. This constitutes second stage of sampling. The last stage of sampling procedure involved random sampling of consumers from the merchants' customers having savings or current account using POS in the selected local governments' area and the second group who constitute other electronic payments users.

The sample size was carefully determined to reflect the features displayed by the population considered for this study. A total of 650 respondents were sampled for this study. Data were analyzed using descriptive statistics and Analysis of Variance.

*2.1 Reliability and Validity of Research instrument*

Reliability is an assessment of the degree of consistency between multiple measurements of a variable (Pallant, 2004). Cronbach's alpha was used to assess the internal consistency of the entire scale. According to Pallant (2004), reliability scores greater than 0.70 are acceptable. As all of the items had an alpha above the standard guideline of 0.70, the scales are suitable for analysis with acceptable reliability. Cronbach's alpha score of 0.729 was obtained for the entire scale. This indicates that there is internal consistency of the entire variable scale and that variables construct exhibited strong internal reliability. The results, therefore, confirmed that the instrument used for this study had satisfactory construct validity.

## 3. RESULTS AND DISCUSSION

The result of the level of consumers' satisfaction with POS is presented in Table 3. Consumers' satisfaction is an emotional response to the experiences associated with the adoption of point of sale terminals. Thompson et al. (1991) also sees satisfaction in the usage of technology as a feeling of joy, elation or pressure. Thus, the result of the level of adoption (Table 3) is presented first,, to disaggregate the adopters from non adopters. This is because only those who have adopted can give the emotional response of their experience with POS adoption. The result indicate that majority (66.2%) of the consumers have adopted point of sale terminal in the study area while 33.8 percent of the consumers have not adopted. The quality, effectiveness, success and satisfaction with a system can only be validated by its level of adoption (Venkatesh et al. 2003). The result supports the aim of Central Bank of Nigeria to run a cashless economy- with Lagos state approved for test run- as the number of consumers that are adopting point of sale terminal technology is substantial in the study area. One of the main benefits of using point of sale terminals is the reduction of transitory cash in the economy especially now that the cost of managing cash is put at N200b by the Central Bank of Nigeria.

The result of the analysis of the level of consumers' satisfaction (Table 4) revealed that majority of the consumers were very satisfied with the usage of POS terminal on the dimensions of convenience (87.2%), technology quality (83%), perceived usefulness (76%), and technology selection (85%). However, fewer consumers were satisfied with the speed of transaction (38%), level of service (28%) provided by the merchants, awareness (26%), and security (41.3%), these findings suggest opportunities for improving the customer interface with POS technology. This finding indicates that consumers of the point of sale terminal generally derived high level of satisfaction with the adoption of point of sale terminal.

The result of the hypothesis analyzed by analysis of variance (ANOVA) obtained from the least square estimate is presented in Table 5. The result rejects the null hypothesis that Consumer satisfaction does not significantly affect adoption of POS terminals. This implies that Consumer satisfaction do significantly affect the adoption of POS terminals at 5 per cent level.

## 4. CONCLUSION

This study investigates the level of adoption of point of sale terminals, the consumer level of satisfaction with Point of sale terminal and test the null hypothesis that consumer satisfaction does not significantly affect adoption POS terminal in Nigeria. The findings indicate that fewer consumers were satisfied with the speed of transaction, level of service provided by the merchants, awareness, and security. These findings suggest opportunities for improving the consumers interface with POS technology. This finding concludes that overall level of satisfaction of consumers with POS is low and that consumer satisfaction affects the adoption of POS terminals at 5 per cent level.

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Table 1: Level of Adoption of e-Payment System by Volume (billion)

| Payment instruments | Volume | | | | |
|---|---|---|---|---|---|
| | 2006 | 2007 | 2008 | 2009 | 2010 (half year) |
| ATM | 3,608,022 | 4,765,467 | 18,954,942 | 49,671,367 | 168,171,231 |
| Web (internet) | 1.71 | 5.1 | 2.4 | - | 4.3 |
| Mobile | - | 161,679 | 1,576,207 | 7,471,388 | 7,471,388 |
| POS | 0.019769 | 0.091211 | 0.535376 | 0.627314 | 535,767 |

**Source:** CBN Annual Reports: 2006, 2007, 2008, 2009 and 2010 (half year report).

Table 2: Level of Adoption of e-Payment System by Value (billion)

| Payment instruments | Value | | | | |
|---|---|---|---|---|---|
| | 2006 | 2007 | 2008 | 2009 | 2010 (half year) |
| ATM | 18.91 | 41.28 | 143.30 | 285.87 | 405.87 |
| Web (internet) | 3.51 | 7.1 | 5.7 | - | 47.6 |
| Mobile | - | 0.0447 | 0.165 | 0.013 | 10.30 |
| POS | 0.09 | 0.946.22 | 0.0068 | 0.0078 | 5.4 |

Source: CBN Annual Reports: 2006, 2007, 2008, 2009 and 2010 (half year report).

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Table 3 Level of Adoption of Point of Sale Terminal

| Adoption status | Frequency | % |
|---|---|---|
| Adopters | 358 | 66.2 |
| Non-adopters | 183 | 33.8 |
| Total | 541 | 100 |

Source: Data analysis, 2011

Table 4 Level of consumers' satisfaction with POS

| Variables | Level of Consumers Satisfaction (%) | | | |
|---|---|---|---|---|
| | Very satisfied | Satisfied | Dissatisfied | Neither |
| Convenience | 87.2 | 12 | 0.8 | - |
| Technology quality | 83 | 11 | 6 | - |
| Perceived usefulness | 76 | 15 | 5 | 4 |
| Technology selection | 85 | 9.8 | 5.2 | - |
| Speed of transaction | 62 | 38 | - | - |
| Merchant service delivery | 28 | 21.8 | 49 | 1.2 |
| Level of awareness | 26 | 18.6 | 55.4 | - |
| Security of transactions | 4.6 | 19.4 | 74.7 | 1.3 |

Source: Data analysis, 2011

Table 5 *Consumer satisfaction does not significantly affect adoption of POS terminals.*

| | Sum of Squares | Df | Mean square | F |
|---|---|---|---|---|
| Regression | 21.649 | 1 | 8.653 | 38.244* |
| Residual | 64.505 | 488 | .226 | |
| Total | 86.154 | 489 | | |

Source: Field Survey, 2011; *, significant at 5%

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