

1 Electronic Payment System and Customers' Retention in Banks: 2 Implications for Entrepreneurial Development in Nigeria

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7 **Abstract**

8 This paper delved into the relationship between Electronic Payment System and Customers?
9 Retention in Banks for entrepreneurial development in Nigeria. It was discovered that
10 virtually every transactions performed in the banks today make use of the electronics,
11 irrespective of the class whether literate or illiterate. Yet, customers? keep increasing day by
12 day and not forgetting that the machines put into use go faulty almost every time which have
13 to be repaired almost immediately to avoid customers? being disappointed. The research
14 engages comparative analysis of selected banks in Nigeria based on their long standing in the
15 industry, competitiveness, and their level of ICT compliance. However, questionnaire was
16 drawn to capture the grey area of EPS, customers? retention, entrepreneurial development in
17 banks. A total of 200 respondents answered the questionnaire, SPSS was used to analyze the
18 respondents? outcome and the result showed positive and significant relationship between
19 Electronic Payment System and Customers? Retention.

20

21 **Index terms**— electronic payment system (EPS), banks, customers? retention, entrepreneurship, nigeria.

22 **1 Introduction**

23 The most significant development of the millennium which has substantially influence business operations in
24 the world is the emergence of the information age. The remarkable progress achieved by information and
25 communication technology (ICT) has made it possible for information to be digitalized and transmitted faster
26 and cheaper in mega or tetra bytes. (Alabi, 2005). The application of ICT in Nigerian banks is done through the
27 power and connectivity of personal computers locally and globally. ??oherem (2000) claims that only the bank
28 that overhand the whole of their payment and delivery system and apply ICT to their operations are likely to
29 survive and prosper in the new millennium. Payment involves the transfer of funds from one person to another,
30 thus a payment system rules and technology that make the exchange of payment possible in a banking system. A
31 number of means of Electronic Payment System abound thereby leaving customers' with the choice of whichever
32 they prefer and the knowledge to ICT today allow customers to choose whichever platform they like. The ability
33 of banks also to engage in proper maintenance culture gives room for customers' retention thereby providing a
34 means of survival for small and medium scale entrepreneur. Nigeria used to be cash based economy with over
35 90% of funds residing outside the banking sector as against the developed world where the money in circulation
36 is 40% and 9% in the United Kingdom and United States respectively.

37 Before the emergence of modern banking system, banking operation was manually done, and that solely
38 account for the inefficiency in handling transactions. This manual system involves posting of transactions from
39 one ledger to another without the aid of computer system. Computations which should be done through computer
40 or electronic machines were done manually, which sometimes lead to miscalculations due to human errors, which
41 results in extension of closing hours when account is not balanced on time. (Siyanbola 2013in Abubakar 2014).
42 Ever since the introduction of Electronic Payment System, studies have shown that it enhanced services delivery
43 in the banking industry and brought a great development in the Nigerian Banking Industry. However, a lot

3 LITERATURE REVIEW

44 of problems are associated with the introduction of this electronic payment system out of which the following
45 falls: low internet penetration, money laundry, and high cost of maintenance of e-payment machines, improper
46 customers' identification and account verification of online purchases, literacy and concerns on risks. Studies
47 by ??via (2005), Mahdi and Zhila (2008) and Gonzaliz (2008) have revealed that, at least 50% of the over 800
48 banks in Africa offer one form of Electronic Payment Service or the other. It can be observed from the empirical
49 review that little effort has been made in Nigeria on conducting a study that test the link between Electronic
50 Payment System and customers' satisfaction. This also makes it important to find out empirically, the perception
51 of Nigerian customers on internet banking services.

52 It is against this backdrop/background that this paper tends to investigate Electronic Payment System and
53 Customers' Retention in banks for Entrepreneurial development in Nigeria. The motivation for this study
54 stems from the fact that only limited empirical studies have so far been carried out in this area particularly
55 in Africa. Conducting research of this nature using the Nigerian environment as a developing nation will reduce
56 the knowledge gap to the barest minimum.

57 The following Research Questions are considered for the study: 1. What actually motivate customers' decision
58 to stay with the bank they are operating with? 2. Does electronic banking lead to customer satisfaction? 3.
59 Will quick resolution of banking errors encountered through electronic means influence customers retention in
60 banks? 4. Does the introduction of electronic form of banking transaction increase customers' base of a bank? 5.
61 How do banks sensitize customers especially the illiterates on the use of electronic form of banking transactions
62 The paper is organized as follows: Section 1 introduces the topic, sections 2 deals with literature review, 3 with
63 methodology while 4 and 5 deals with analysis and conclusion respectively.

64 2 II.

65 3 Literature Review

66 The Federal government of Nigeria through its agencies and the banking sector has taken significant strides
67 in the last 15 years to modernise the payment system. The system has been unexploited, problematic and
68 constrained by diverse challenges ranging from lack of adequate legal backing, credibility of the human element,
69 integrity of data transmitted, to interconnectivity and interoperability (CBN 2010). The Nigeria payment system
70 is predominantly cash based due to a culture informed largely by ignorance, illiteracy and lack of appreciation
71 of other non-cash instruments ??Ovia 2005). The development of Nigeria's national payment system has thus
72 witnessed some remarkable achievements in the last ten years, evolving from paper payment systems to electronic
73 payment instruments. The pace of development is described as high in terms of achievements within its short life
74 span and the challenges encountered. The technological infrastructure put in place by the private stakeholders
75 such as the banks and switching companies for the EPS, is also seen as current and of high standard, comparable to
76 some payment infrastructures in other developed countries. For instance, the use of chip and pin electronic cards,
77 currently used in Europe and just taking off in America, started in Nigeria five years ago. The CBN guided
78 by the economic policies of the government and in collaboration with the bankers committee has introduced
79 several measures to modernise the payment system in Nigeria with mixed results. (Briggs & Brooks 2011)
80 Computerization of the Nigerian Banking Industry is a kind of electronic banking, which involves an electronic
81 form of money transmission. Electronic Banking Services are fully automated such that all transactions are
82 concluded in a jiffy. It involves the use of computer network in dispensing cash and transfer of funds. But
83 most customers however, still patronize bank branches in person and find interactions with human teller as very
84 important. Customers enjoying electronic payment services are still not satisfied with the quality and efficiency
85 of the services because of the huge logjam, breakdown and epileptic functioning of the machines. Some banks
86 are lackadaisical about repairing these machines when they breakdown whereas there are a lot of experts around
87 who can be called upon to repair and maintain them. Most customers are afraid they might be hooked up in a
88 corner making them to loose their money. This is expressed in the number of times customers visits bank, their
89 waiting time in banks, their queuing period also pose a lot of challenges to customers. Security of both bank
90 staff and customers is also major source of concern as most of them are afraid the armed robbers may attack the
91 bank.

92 The world has witnessed an upsurge of electronic payment instruments meant to facilitate trade and simplify
93 payments, before the introduction of electronic payment into Nigerian banking system; customers had to walk
94 into the banking hall to do transactions of all kind. They had to queue up and spend more hours to talk
95 to a teller to make their transactions. Inconveniences caused by these long queues discourage most customers
96 who sometimes renege from the queues in annoyance. For many years, bankers, IT experts, entrepreneurs, and
97 others have advocated for the replacement of physical cash and the introduction of more flexible, efficient and
98 cost effective retail payment solutions (Siyambola 2013 in Ahmadu Abubakar 2014). Success in the electronic
99 banking era is measured in the eyes of the customers. A bank has to profitably meet the needs of customers and
100 continuously improve its ability in doing so. It has to be effective, accurate, reliable, helpful and understanding
101 thereby retaining existing customers' and adding more customers. More so these days that banks saddle the
102 responsibility of marketing to staff, it is not always easy to loose customers that are hard to win because of
103 malfunctioning of machines and ill-satisfaction of customers.

104 Agboola (2001) studied the impact of computer automation on the banking services and discovered that

105 electronic banking has tremendously improved the services of some banks to their customers. He made a
106 comparative analysis between the old and new generation banks and discovered variation in the rate of adoption
107 of the automated devices.

108 The 21 st century has witnessed a dramatic evolution in the financial service industry as a result of the
109 rapid advancement in technological transformation which has become known as e-developments. These changes
110 have engulfed all areas of financial intermediation and financial markets such as e-finance, e-money, e-banking, e-
111 brokering, e-exchange, esupervision etc. This new information technology (IT) is turning into the most important
112 factor in the future development of banking, influencing bank's marketing and business strategies. As a result
113 of rapid advances in IT and intensive competition in the banking sector, the adoption of e-banking is being
114 increasingly used as a channel of distribution for financial services (Mahdi & Mehrdad, 2010 cited in Ahmad
115 Abubakar 2014) Ahmadu Abubakar (2014) studied the effects of Electronic Banking on Growth of Deposit
116 Money banks in Nigeria using all the deposit money banks in the country spanning between 2006 -2012. The
117 study result showed that there exist a significant relationship between mobile banking and total deposits, internet
118 banking and total assets of deposit money banks in Nigeria. However, the study further found out that there
119 is no significant relationship between internet banking and total deposits, mobile banking and total assets of
120 deposit money banks in Nigeria.

121 Dauda & Akingbade (2011) in their research Technology Innovation and Nigeria Banks performance: the
122 assessment of employee's and customer's responses sampled fifteen banks in Nigeria and found out that there
123 is a significant relationship between the use of the ICT and customers' satisfaction. They went further to test
124 the relationship between technology innovation and Nigeria banks employees' performance and the realised that
125 there is a significant and positive relationship between technology innovation and banks employees' performance.

126 Adeoye and Lawanson (2012) tested Customers Satisfaction and its Implications for bank Performance in
127 Nigeria using a commercial bank in the Country 'Union Bank' with several interview from Individual and
128 customers of the bank and resolved that Electronic Banking in Nigeria is yet to create any significant impact on
129 service delivery, which will consequently lead to improved customer satisfaction.

130 Customer satisfaction leads to customers' retention and this is a measure of how products or services meet
131 or surpassed customer expectations. In a competitive market like the banking industry, it consists of various
132 strategies aimed at keeping, meeting or exceeding customers' expectations. Saha and Zhao (2005) see customers'
133 satisfaction as a collection of outcome of perception, evaluation and psychological reactions to the consumption
134 experience with a product / service. In other words, it is a result of a cognitive and affective evaluation where some
135 consumption standard is compared to the actually perceived performance. Thus, if the performance perceived
136 is less than expected, customers will be dissatisfied, and where the perceived performance exceeds expectations,
137 customers will be satisfied and this would lead to positive behaviours or outcome (Saha and Zhao, 2005 and Yau,
138 2007). A satisfied customer tend to be loyal (Timothy et-al, 2007)

139 4 Methodology

140 This section deals with the methodological phase of the study that facilitates the data gathering and analyses. The
141 research design for this study literally anchors on the types of data employed in the study and its sources and also
142 setting the framework for data analysis. In this study, the exploratory method is adopted whereby questionnaires
143 were used. The sampling design employed is probability simple random sampling technique, which is used to
144 select respondents consisting of lecturers, students, businessmen/women, artisans, politicians, bank workers and
145 civil/public servants. The inclusive criteria in this study were made up of selected commercial banks in Nigeria.
146 The justification for choosing these banks is based on their long standing in the industry, competitiveness and
147 their level of ICT compliance (Guaranty Trust Bank Plc, First Bank Plc and Skye Bank Plc). This research
148 work is largely quantitative but also made use of qualitative technique based on views, perceptions and opinions
149 of respondents on how best electronic payment system influences customers' satisfaction & retention.

150 More so, questionnaires are distributed to two hundred and fifty (250) targeted respondents operating in our
151 banks, whereas only two hundred (200) were returned and used for the purpose of the presentation and analysis
152 of the data, yielding a response rate of 80 percent. This response rate considered large enough and sufficient
153 for statistical reliability and generalization (Tabachnick & Fidell, 1996; Stevens, 2002 and Ansari, 2014). This
154 high response rate undoubtedly improved the validity and reliability of the questionnaires since the greater the
155 response rate is, the more accurate its estimate parameters in the population sampled (Pallant, 2002). Also, to
156 guarantee the utmost precision of this work, the use of Statistical Package for Social Sciences (SPSS) software
157 was employed. The mean and standard deviation of the administered questionnaire from both groups is shown
158 in the appendix.?? = ?? 0 + ?? 1 (?? 1) + ?? 2 (?? 2) + ? + ?? ?? (?? ??) + ??(3.1)

159 Where; dependent variable (i.e. customers' satisfaction); regression constant; slope/gradient; independent
160 variables (i.e. benefits from electronic payment system); and random variable.

161 The data shall be analyzed quantitatively using descriptive statistical analysis. Tables would be presented to
162 calculate and interpret respondent's opinion from the questionnaire. Both descriptive and inferential statistics
163 tools were employed in the analysis of data. Percentage ranking was used in the presentation of primary data.
164 The method of data analysis in this research work is the qualitative in nature both values will be attached to it
165 to make it quantitative method. The t-test is defined as: $2 1 2 2 1 ? ? ? ? ? ? = n t ? ?(3.2)$

166 The t-test represented by Equation (ii) is based on ?? ? 2 degrees of freedom.

7 CONCLUSION AND RECOMMENDATIONS

167 Thus, the Analysis of Variance (ANOVA) is employed as a statistical method to investigate the influence of
168 predictors (benefits from electronic payment system) on dependent (customers' retention) variables. The ANOVA
169 test is based on F-test statistics for the reject of the null hypothesis "the predictor has no significant influence
170 on the dependent" if the calculated F-Statistic is greater than tabulated F-Statistic i.e. $F_c > F_T$ (Reject the
171 null hypothesis). The F-test is expressed as: $() () k n ESS k RSS F ? ? = 1$ (ii)

172 Where RSS = Regression Sum of Square = Explained Variation = $() 2 ? ? y y$; ESS = Error Sum of Square
173 = Unexplained Variation = $2 ? u ; () () k n k ? ? 1$

174 are the degree of freedom; k is number of predictors; and n is total number of sample.

175 IV.

176 5 Data Presentation, Analysis and Interpretation

177 6 Table 4.2 Interpretation

178 The estimated result for electronic payment system and customers' retention derived is presented in table ??1
179 above which revealed the impact of electronic payment system and customers' retention. The table reports the
180 partial correlation of electronic payment system (i.e. cost of credit, cash risk, informal sector control, inefficiency
181 and corruption control) and customers' retention. From the table, the partial correlation between customers'
182 satisfaction and these three variables (cost of credit, cash risk and informal sector control) were found significant
183 at 5% critical level while inefficiency and corruption control is significant at 1% critical level. Also, the table also
184 shows the partial correlation of individual benefits from EPS with varying critical level.

185 Furthermore, the analysis of variance (ANOVA) table, table 4.2 reports that benefits from EPS (proxy by
186 its target i.e. cost of credit, cash risk, informal sector control, inefficiency and corruption control and bank
187 performance) has significant impact on customers' retention. In assessing the partial significance of the estimated
188 parameters (benefits from EPS) for the considered variables, the t-statistics results are also presented in the table
189 below table 4.2 tagged "coefficient". The table reports that cost of credit, cash risk and inefficiency and corruption
190 control have positive influence on customers' satisfaction while informal sector control has negative impact on
191 customers' retention. In addition, the result shows that inefficiency and corruption control is significant with
192 customers' satisfaction at 5% critical level while informal sector control is significant at 10% critical level. Thus,
193 cost of credit and cash risk was insignificant with customers' retention at 5% and 10% critical level. Invariably, the
194 F-statistic result shows that all the incorporated benefits from EPS and customers' retention are simultaneously
195 significant at 5% critical level.

196 V.

197 7 Conclusion and Recommendations

198 This study investigates electronic payment system and customers' retention in developing economies with specific
199 reference to Nigeria. The result of the study indicates a strong and positive relationship exist between EPS and
200 customers' retention. Result further showed that EPS increases the ability to hold cash for transactionary,
201 precautionary and speculative motive. EPS also reduces the volume of customers transacting business in the
202 banking hall.

203 On the other hand, this study reveals that EPS caused lavish spending; increased crime rate and the illiterates
204 sing EPS paved way for fraud on EPS.

205 By and large, the study EPS and customers' retention despite its shortcomings makes life easier for customers
206 viz-a-viz cost reduction, time saving, easy access to cash even at odd time (mid-night for emergency), error on
207 ATM has equally reduced.

208 From the study, it is recommended as a way of enhancing the efficiency of EPS for e-payment in developing
209 economies with specific reference to Nigeria: a. There should be continuous training, seminar and workshop.
210 This will increase the knowledge of bank workers, customers in ICT skills. b. Bankers Committee should work
211 in hand with government to improve the level of supply power as the high cost of generating power affects the
212 smooth deployments and running of EPS c. The management team of all banks are advised to see to improving
213 the internal control of their banks so as to reduce the fraud perpetrated through the use of EPS d. There should
214 be continuous sensitization of the populace of the use of EPS so that the queues, stress, logjam etc experienced of
215 EPS will reduce and eventually eradicated e. Government should come up with policies and regulatory framework
that will favour both the governed and the govern so as to give everybody a sense of belonging in the society. ^{1 2}

III.

Figure 1:

| | Cost of Credit | Cash Risk | Informal Sector Control | Inefficiency and Corruption | Customers' Retention |
|--|----------------|-----------|-------------------------|-----------------------------|----------------------|
| Cost of Credit | 1 | 0.832 | 0.401 | 0.309 | 0.245 |
| Significant (2-tailed) | . | 0.000** | 0.000** | 0.002** | 0.014* |
| Cash Risk Significant (2-tailed) | 0.832 | 1. | 0.442 | 0.325 | 0.256 |
| Informal Sector Control Significant (2-tailed) | 0.401 | 0.442 | 1. | 0.489 | 0.216 |
| Inefficiency and Corruption Control Significant (2-tailed) | 0.309 | 0.325 | 0.489 | 1. | 0.647 |
| Customers' Satisfaction Significant (2-tailed) | 0.245 | 0.256 | 0.216 | 0.647 | 1. |
| | 0.014* | 0.010* | 0.031* | 0.000** | |

Figure 2: Table 4 . 1 :

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