ABSTRACT
This study was designed with the aim to investigate the implementation of electronic payment systems in the service delivery of various insurance companies operating in Nigeria. To this end, the researchers have been able to assess if electronic payment systems have improved service delivery of insurance companies in Nigeria, and thus ascertained its acceptance level within the Nigeria’s insurance business environment. The study employed a cross-sectional type of survey design. The study commenced with the gathering of relevant literature. More so, a simple random technique was employed and relevant data were gathered through the use of structured questionnaire. The sample population consisted of 79 respondents made up of some members of staff drawn from 32 insurance companies which were selected from the directory of member companies. The major statistical technique employed for this study was a Kolmogorov-Smirnov test. Two hypotheses were tested in this study. The hypotheses tested in the study found that electronic payment systems have improved service delivery of insurance companies in Nigeria but yet to be fully accepted within the Nigeria’s insurance market space. The study confirms the significant influence of electronic payment system in the service delivery of insurance companies Nigeria. The study recommends that continuous investment in technology is imperatively crucial to allow for cordial business relationship among all players in the Nigerian insurance market environment. Also, greater attention should be placed on customers’ education and engagement in the use of electronic payment systems to enhance business transactions, and Government initiative towards cashless policy should be made feasible by continuously encouraging members of the public towards transacting business electronically.

JEL CLASSIFICATION & KEYWORDS
- U10  ELECTRONIC PAYMENT  SERVICE DELIVERY
- IMPLEMENTATION  INSURANCE COMPANIES  NIGERIA

INTRODUCTION
Technology readiness to backing payment system in the Nigerian insurance market is, indeed, a herculean task due to its peculiar nature which is further encapsulated by the vagaries of Nigeria’s business and market forces. The recent study of Askhia (2010) had opined that until companies are able to deliver their services in an efficient manner, with technology as key determinant, financial institutions may not be able to retain their customers. The decisions concerning where, when and how to deliver such service have a significant role on the nature of customers’ service experiences (Lovelock & Wright, 1999).

However, technology is being employed to capture information on customers, which in turn is used to monitor the customers’ buying behaviour and thus communicate with them via personalized offers (Egan, 2004). Ogboijefo, Aduloju, & Olowokudejo (2011) had emphasized that, in the world of business, electronic commerce serves as the cornerstone which evolves relationship within strategic-oriented business environment and thus, strategized for modern competitive edge. The work of Oladele & Amunighor (2013) opined that enormous effort should be put together at integrating information technology, customer service and firm performance; and thus stipulated that technology is to the advantage of customer and should lead to customer loyalty, as organization can communicate with customers using up-to-date techniques on a real basis which will remove uncertainty and lead to the creation of trust.

Electronic payment system is being noted as vital part of e-commerce. Imperatively, the wider patronage of e-commerce is being said to hinge upon the availability of a guaranteed and trusted e-payment system (Sumanjeet, 2009; Babdeley, 2004). Some previous studies (such as Oladele & Akanbi, 2012; Ayo & Ukpere, 2010; Zulu, 2006) had noted problems militating against e-payment to include: integrity, non-reputation, confidentiality, reliability, authentication, authorization, connectivity failure in telephone lines, devoid of proper legal and regulatory framework, and low level of credit access. While much studies are yet to be recorded on electronic payment implementation in the service delivery of insurance companies in Nigeria; some notable studies, many of which are recent, seem to suggest that, apart from differences in the methodology and variables adopted, electronic payments systems implementation had been feasible in the customer service delivery in the banking sector of the financial system (Moses-Ashike, 2012; Auta, 2010; Fenuga & Oladejo, 2010). For example, the study of Kaleem and Ahmad (2008) noted that increased availability and accessibility of more self-service distribution channels assists bank administration in reducing the expensive branch network and its associate staff overheads. Some other earlier studies (such as Howcroft, Hamilton, & Hewan, 2002; Kiang, Raghu, & Hwee-Min, 2000) established that the most important factors encouraging consumers to use electronic banking and lower fees followed by reducing paper work and human error which invariably curtail disputes. More so, a decrease in the proportion of customers visiting banks with an increase in alternative channels of distribution had been said to reduce the queues in the branches (Thornton & White, 2001).

This article, therefore, attempts to provide answers to the following research questions: Has there been improvement in the implementation of electronic payment systems in the service delivery of insurance companies in Nigeria? Or Has electronic payment system been fully accepted in the
Nigerian insurance market environment? The remainder of the paper is organized as follows: the review of existing literature on electronic payment in relation to service delivery including the theoretical underpinnings. The methodology section takes note of the empirical analysis including the sample and data collection procedure, the measurement of the variables of interest, and the results. The concluding part presents the discussion of research findings, recommendations, contribution to knowledge, and suggestion for further studies.

**Literature Review**

Electronic payment is being described as the automatic processes of exchanging pecuniary value among parties in business related transactions and transmitting such value via the information technology network (Ayo & Ukpere, 2010). Stan (1997) sees it as a system of payment whereby transactions take place electronically without the use of physical cash. Steve (1996) as cited in Fenuga (2010) defined electronic payment as a system that is automated via the use of information technology where bank transactions are done within and without banking hall. Olive (2007) as cited in Tennyson and Mercy (2014) defined electronic payment as a form of financial transaction in which funds are transferred through an exchange of electronic signals between financial institutions, rather than an exchange of cash, cheque or other negotiable instruments. Otiso (2012) added that the major driving motivation for implementing electronic payment system is towards the enhancement for transaction effectiveness. The commonly used electronic payment channels include automated teller machines (ATM), mobiles phones, point of sales (POS) terminals, online web portals, the payment cards (debit or credit), automated clearing house (ACH), and direct debit/deposits (USAID, 2012; Nnaka, 2009; OECD, 2006; Lee, Yu, & Kuo, n.d.; Ekwueme, Egbunike, & Amara, n.d.).

Electronic payment is advantageous in that it is characterized with lower fees coupled with the reduced paper work and human error, which in turn reduces disputes in transactions (Hawcroft et al., 2002). According to studies such as Tennyson & Mercy (2014), Chando (2011), and Sumanjjeeet (2009), the major attributable nature of electronic payment is said to include: security, cost effectiveness, usability, universality, speed, convenience, acceptability and privacy. However, a great deal of benefits had been associated with the use of electronic payment systems such as: easy tackling of payment; improves the quality of financial report; promotes economic growth and development; prevents forgery and illegal copying of e-cash; reduces corruption; reduces costs; greater convenience and security; promotes transparency and accountability; portable; efficient and effective (Tennyson & Mercy, 2014; Agboola, 2006; Davis, 2003; Humphrey, Kim, & Vale, 2001).

However, the effectiveness of electronic payment systems have been associated with some risk elements. These risk elements had been noted to include: lack of trust, complexity, lack of security, disruption, in information access, lack of specific regulations, cost ineffectiveness, lack of marketing initiatives (Tahir & Abbass, 2013; Lim, Lee, & Kurning, 2007; OECD, 2006; Taylor, Celuch, & Goodwin, 2002). The mentioned risk elements had been ascribed different descriptions by earlier studies; according to Hewer & Hawcroft (1999), the term trust was depicted as a measure of risk. While Suguanti & Balachandran (2001) viewed security as a risk element, Min & Gallen (1999) found that the description of information access is a risk element in relation to unwillingness to use Internet channels for commerce. Tennyson & Mercy (2014) noted further factors that may limit the effectiveness of electronic payment systems to include: inadequate operational facilities, epileptic power supply, frauds, ineffective telecommunication services, access to ICT facilities, high financial risk and insecurity.

A service, according to Kotler & Armstrong (2008) as cited in Nwankwo & Durowoji (2011), is being depicted as an activity or benefit that one party can offer to another that is imperfectly intangible and does not culminate in the ownership of anything with its production not tied to a physical product. An earlier study of Lovelock & Wright (1999) see a service as an act or performance that creates benefits for customers by bringing about a desired change in or on behalf of the recipient. However, the quality of the service delivery of an insurance company can be pivotal on marketing hence the intangibility of its service nature; and the unique nature of insurance service is that it is purchased at the present time only for the value to be realized in the future (Ajemunigbohun, Dansu, & Asokoare, 2010). Ikupolati (2008) opined that insurance service is characterized by intangibility, inseparability, variability and ownership of a thing of title that can be transferability.

An earlier study by Toran (1993) had argued that quality should form a significant measure of insurance service. Walker & Baker (2000) are of the opinion that customer’s expectation forms the basis for insurance quality measurement. To this end, Nwankwo & Ajemunigbohun (2013) had opined that insurance companies should clarify their value and expectations in dealing with prospective and existing customers, as well as putting effort together towards customers’ attraction and retention. Importantly, insurance quality measurement, according to an earlier study by King (1992), had been adduced to address financial stability of the company, insurer’s reputation, integrity of agent(s) and the quality of information and guidance from the agent.

**Research method**

For the purpose of this study, a cross-sectional survey design was employed. The choice of this survey technique was adopted due to the fact that it observed what happened to sample subjects or variables without any attempt to manipulate or control them (Asika, 2008). More so, survey design was useful due to its ability to predict behaviour and assist researchers in collecting identical information concerning all the cases in a sample (Aldridge & Levine, 2001). The survey research was aided with the involvement of structured questionnaire in gathering relevant data for this study. However, the responses’ views with respect to the studied variables were coded to improve the completion of the questionnaire which was drawn with the support of Likert-type scaling measurement of ‘Agree’, ‘Indifferent’, and ‘Not agree’.

The population for this study made up of members of staff within the Nigeria’s insurance companies operating in Nigeria. The choice of member company was based on their choice of member company was based on their rank in order of gross premium and market share capabilities (that is, top 32 member companies as documented by the Nigerian Insurer Association, 2013). The sample population was drawn from Lagos state, being the commercial city of Nigeria and platform for a large number of insurance companies to operate. A total of 96 copies of the questionnaires were sent (3 copies were sent to each insurance company with a covering letter). To ensure the correctness of respondent, a reminder was sent to respondents who returned back uncompleted questionnaires. A total of 89 copies of the questionnaires were returned back postcard and to encourage filling, handling and returning of the
distributed questionnaire. To this end, 84 copies of the questionnaire were retrieved while 79 copies were correctly completed and useful for the final analysis (that is, a 83% effective response rate).

In a bid to achieve the purpose for which the questionnaire was set out, a pilot study was conducted to test the reliability measures. The Cronbach alpha was 0.781; which thus indicated that the alpha level was above the standard 0.70. This study took note of both the construct and theoretical validity. The theoretical validity was designed through measures of the variables understood from well-taught out literatures in relevant studies. The construct validity was designed by giving a set of questionnaire to few selected insurance companies’ top managers, IT managers and some members of the academia. These experts went through the instrument and gave their remarks which assisted the researchers to present the instrument in understanding and acceptable manner to the various respondents.

Test of Hypotheses

The researchers established two (2) hypotheses that provide a clear-cut way for the conduct of this research. The hypotheses testing method employed was Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test is suitable due to fact that it is non-parametric tool used to test the goodness of fit of an ordinal data and calls for a comparison of an observed sample distribution with a theoretical distribution (Cooper & Schindler, 2005). The test focuses on the largest value of the deviation among observed and theoretical proportions. The Kolmogorov-Smirnov is given as:

\[ D = \max |F_o(X) - S_n(X)| \]

Where \( F_o(X) \) = the specific cumulative frequency distribution under \( H_0 \), for any value of \( X \) and is the proportion of cases expected to have scores equal to or less than \( X \). \( S_n(X) \) = the observed cumulative frequency distribution of a random sample of \( N \) observations where \( X \) is any possible score. The \( H_0 \) is the specification of the null hypothesis. The null hypothesis is such that is set up as a logical counterpart of the alternative hypothesis such that if the null hypothesis is untrue, the alternative hypothesis must be true (Pagano, 1994). The procedural steps to testing the hypotheses were as follows: specify the null hypothesis; specify the level of significance; and stipulate the decision rule. The degree of freedom is measured at 5% level of significance. The decision rule is such that null hypothesis \( (H_0) \) will be rejected once the calculated \( D \) (i.e. \( D_{cal} \)) is greater than the tabulated \( D \) (i.e. \( D_{tab} \)) under the divergence level of 0.05. The tabulated \( D \) from the Kolmogorov-Smirnov test table is always represented by \( (a / \sqrt{N}) \); where \( a=1.36 \) and \( N=\text{number of observation} \). The critical value of \( D \) for sample size of \( N \) must be greater than thirty-five (i.e. \( N > 35 \)) for large samples.

1. \( H_0 \): Electronic payment systems have not improved service delivery of insurance companies in Nigeria
2. \( H_1 \): Electronic payment systems have not been fully accepted in the Nigerian insurance industry

### Results and Discussion

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Agree</th>
<th>Indifferent</th>
<th>Not Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_0 ): Electronic payment systems have not improved service delivery of insurance companies in Nigeria</td>
<td>47</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>( H_1 ): Electronic payment systems have not been fully accepted in the Nigerian insurance industry</td>
<td>0.3333</td>
<td>0.6666</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2: Kolmogorov-Smirnov Frequency Table for Hypothesis 1

- **Hypothesis 1**

Electronic payment systems have not improved service delivery of insurance companies in Nigeria. From the above table, it shows that the calculated \( D \) value is the point of greatest divergence between the cumulative theoretical distributions and cumulative observed which was determined to be 0.3502. The tabulated \( D \) from the Kolmogorov-Smirnov test table at \((a / \sqrt{N}) = 1.36 / \sqrt{79}\) is given as

\[ D= a / \sqrt{N} = 1.36 / \sqrt{79} = 0.1530 \]

In this instance, hence the calculated \( D \) value (0.3502) exceeds the critical value of 0.1530, the null hypothesis \( (H_0) \) stating that electronic payment systems have not improved service delivery of insurance companies in Nigeria is rejected at \( \alpha=0.05 \) (see table 2), this, then, indicates that electronic payment systems have improved service delivery of insurance companies in Nigeria, with respect to the responses of the respondents.

### Table 3: Responses to the testing of Hypothesis 2

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Responses</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>47</td>
<td>59.5</td>
</tr>
<tr>
<td>Indifferent</td>
<td>21</td>
<td>26.58</td>
</tr>
<tr>
<td>Not Agree</td>
<td>11</td>
<td>13.92</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Authors

### Table 4: Kolmogorov-Smirnov Frequency Table for Hypothesis 2

- **Hypothesis 2**

Electronic payment systems have not been fully accepted in the Nigerian insurance industry. From the above table, it shows that the calculated \( D \) value is the point of greatest divergence between the cumulative theoretical distributions and cumulative observed which was determined to be -0.2616. The tabulated \( D \) from the Kolmogorov-Smirnov test table at \((a / \sqrt{N}) = 1.36 / \sqrt{79}\) is given as

\[ D= a / \sqrt{N} = 1.36 / \sqrt{79} = 0.1530 \]

To this end, the calculated \( D \) value (-0.2616) is less than the critical value of 0.1530, the null hypothesis \( (H_0) \) stating that electronic payment systems have not been fully accepted in the Nigerian insurance industry is accepted at \( \alpha=0.05 \) (see Table 4), this, therefore, implies that the alternate hypothesis that electronic payment systems have been fully

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**Table 1: Responses to the testing of Hypothesis 1**

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Responses</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>9</td>
<td>11.4</td>
</tr>
<tr>
<td>Indifferent</td>
<td>16</td>
<td>20.25</td>
</tr>
<tr>
<td>Not Agree</td>
<td>54</td>
<td>68.35</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Authors

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accepted in the Nigerian insurance industry is rejected, with regards to the responses of the respondents.

CONCLUSION

This research attempts to examine the implementation of electronic payment systems in service delivery of insurance companies in Nigeria. While the study proves an improvement in electronic payment systems in relation to service delivery process within the Nigerian insurance market space, it was discovered that electronic payment have not been fully accepted within the Nigerian insurance industry. The study of Tennyson & Mercy (2014) had noted reasons why electronic payment systems are significant to include: improvement of quality of life; improvement of effective service delivery and increase in the social well being of Nigerians; provision of quicker and better services and spontaneous responses to demand conditions; enhancement of competitiveness and helps to gain a competitive advantage.

Conclusively, the study establishes that greater investment in the technological capabilities of insurance companies will advance customer service delivery process. This is in consistent with recent studies, such as Aduloju, Olowokudejo, & Obalola (2014), Idris et al. (2013), Breznik (2012), Chen & Tsou (2007), and Ray, Muhanna, & Barney (2005), among others. For example, while the study of Ray et al. (2005) expressed that a firm may be placed at competitive disadvantage in terms of the performance of its customer service process if there is failure to invest in IT resources and capabilities; Idris et al. (2013) opined that customer service delivery process of insurance companies in Nigeria can become better if they invest more in information technology, make provision for IT training facilities to staff from time-to-time, and educate their customers to ensure faster, smooth and quality service delivery performance.

Recommendations, Research Implication and Suggestions for Future Studies

On recommendation, practitioners of insurance should gear up to meeting with the challenges posed by the implementation of electronic payment systems towards service delivery. More so, continuous investment in technology is imperatively crucial to allow for cordial business relationship among all players in the Nigerian insurance market environment. Greater attention therefore should be placed on customers’ education and engagement in the use of electronic payment systems to enhance business transactions. Government initiative towards cashless policy should be made feasible by continuously encouraging members of the public towards transacting business electronically. Regulators are advised to push policy that will ensure implementation of and continuous improvement in the use of electronic payment systems in the Nigerian insurance market environment. Insurance companies should liaise with banks in the effective payment of premium via their Automated Teller Machine (ATM) and lastly, insurance companies should set up outlets whose business is to ensure the workability of Point of Sale (POS) Terminals in the collection of premium to ease customers in their payment procedure.

The implication of this study is that it helps educate insurance companies’ managers of need to continually assess their firms’ customer service performance with respect to IT-based facilities and the need to integrate their service delivery process alongside electronic systems. This study thus informs regulatory authorities of the need to design policy that will aid electronic payment systems implementation within Nigeria’s insurance market space. This study serves as an eye-opener to major players within the Nigerian insurance industry, and lastly, contributes to knowledge in that it educates insurance practitioners of the dynamics of electronic payment systems.

This study suggests that future studies should focus efforts at gathering information from the insure populace as related to electronic payment usage. Additionally, the various electronic payment modes should be understudied to ascertain their acceptance level among the insure public. Research efforts could be drawn at designing electronic payment model that could best work for insurance companies in Nigeria. Lastly, future research could also attend to the effectiveness and efficiency of electronic payment systems within the Nigerian insurance industry.

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