Effect of Electronic Payment System on Tax Revenue Generation in Nigeria

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Abstract
This study evaluated the effect of electronic payment systems on tax revenue generation. The study specifically sought to determine the effect of automated teller machine payment, mobile banking payment, point of sales and web-transfer payment on tax revenue generation in Nigeria. Ex-post facto research design was adopted in the study and secondary data obtained from Federal Inland Revenue Service (FIRS) annual publications and National Bureau of Statistics for the years (2013-2021) was used. Analysis of data was done using descriptive statistics, unit root tests and ordinary least square regression at 5% level of significance. The outcome of the analytical tests revealed that automated teller machine payment, mobile banking payment and web-transfer payment had both positive and significant influence on tax revenue; while point of sales had positive and insignificant effect on tax revenue generation in Nigeria within the period reviewed. The implication of these findings is that the adoption of electronic payment in Nigeria has significantly influenced tax revenue generation. It was then recommended among other things that the government should invest in its internet security framework to create a firewall against fraud and instill confidence in the citizens to adopt the use of POS which would contribute to aggregate consumption and improvement in tax revenue.
Key words: *Electronic payment system, tax revenue, automated teller machine, point of sales, web-transfer, mobile banking*

I. INTRODUCTION

The quest for improved delivery of public services by members of the general public has necessitated the need for government at all levels to collect sufficient revenue that can cover budget expectations by encouraging taxpayers to better fitful their tax obligation. To meet these challenges therefore, tax authorities are turning to e-government led solutions like the electronic payment (Amitah, Shailendra & Gupta, 2008). Precisely, modern technology has changed the conventional payment system into a more efficient and effective system, devoid of 'cash and carry' syndrome. The easiness of transacting economic activities as well as safer and quicker access to funds, among other factors, has placed electronic payment on a more glorified pace than cash-based system (Oginni, El-maude, Mohammed & Onuh, 2013). Therefore, electronic payment (e-payment) system provides a medium where economic exchanges take place without visiting the banks or with no physical presence of the transacting parties. A well-functioning e-payment system has been recognized to have much relevance on financial stability and overall economic activities of the country (Mohammed, 2020).

Historically, the Central Bank of Nigeria (CBN) introduced cashless policy that facilitated e-payment system in 2002. During this period, the Nigerian Automated Clearing System (NACS) was introduced as a veritable platform for development of electronic payment and to reduce clearing of cheques' period. In 2003, Automated Teller Machine (ATM) was introduced by Interswitch. Subsequently, in the early period of 2011, the Nigerian Inter-bank Settlement System (NIBSS) announced instant payment services and the first set of cash deposit ATMs were launched. Consequently, transition to cashless economy was proposed in December, 2011, but was first implemented in Lagos in January 2012. Cashless Policy was introduced in Nigeria in link with the National Payment Systems Vision 2020 with the primary objective to create a safe, efficient and effective mechanism for conveniently making and receiving all types of payment from any location and any time through the various electronic channels (Afaha, 2019), which increases greater financial inclusion and increase in economic development (CBN, 2017).

The Nigerian tax system has faced so many challenges in recent years which have brought about inefficiency, increase in administrative cost and consistent low tax yield. For instance, Olaoye and Atilola (2018), also observed that the prevalence of tax evasion and avoidance in the Nigerian tax system have reduced the amount of revenue collected from income tax which has obviously affected the cost of governance.

Similarly, in a Federal Inland Revenue Press release through Punch, 2015, it was reported that about 12 billion Naira traditionally vanishes into the pockets of individuals annually, and this was believed to be due to the manual system of tax revenue collection; characterized by unavailability of tax statistics and poor record keepings, complexity of payment and poor technological exposure on the part of both the tax payers and tax authorities. The e-payment system as practiced by other countries such as Germany, America, Malaysia and many other developed economics has helped to reduced time of compliance by tax payers in payment of taxes as well as provided reliable and accurate tax statistics (Adegbie & Akinyemi, 2020).

The traditional system of tax payment has facilitated bribery by the taxpayers to the officials due to physical contact between the two groups which has led to reduction in the amount of tax to be paid. Consequently, the inability of the tax official to effectively collect enough revenue funds that would adequately cover budget expectations has led to huge revenue collection gap. In a bid to remedy the situation, the government has introduced electronic payment system to create a safe, efficient and effective mechanism for conveniently making and receiving all types of payment from any location at any time through the use of electronic channels such as automated teller machine (ATM), point of sales (Pos), Mobile Money Banking (MMB) and Web-transfer or internet transfer (WT). These channels of electronic payment were developed to improve and provide a secured e-payment transaction that will facilitate the elimination of losses of revenue through corruption and simplify payments (Abor, 2004); while decreasing the percentage of cheque and cash transactions.

In Nigeria, extant studies such as (Mohammed, 2020; Adegbie & Akinyemi, 2020; Oyelami, Adebiyi & Adekunle, 2020; Okifo & Igbunu, 2015 and Afaha, 2019), investigated the impact of electronic payment system on the economic growth of Nigeria. This implies that the authors employed economic growth as the dependent variable in their studies. However, Adegbie & Akinyemi, (2020) in their study adopted revenue generation as the dependent variable, but the study was carried out only in Lagos State. The problem with this study is that it is too specific and its findings cannot be extrapolated for the explanation of e-payment system carried out in Nigeria generally so that policy and decision making will be better guided. Moreover, Mohammed (2020), also observed that there is dearth of empirical studies that provided quantitative evidence on the relationship between electronic payment and economic growth in Nigeria. Hence, there is need to carry out a study that will provide empirical evidence on the nature of the relationship between electronic payment system and tax revenue generation in Nigeria as a means of evaluating the extent to which e-payment has contributed to tax revenue generation in Nigeria. Therefore, the broad objective of the study is to determine the effect of electronic payment on tax revenue generation in Nigeria.

II. REVIEW OF RELATED LITERATURE
2.1 Conceptual Review
2.1.1 *Electronic Payment System (e-payment)*

E-Payment systems refer to the automated processes of exchanging monetary value among parties in business transactions and transmitting this value over the ICT networks (Nnaka, 2009 as cited in Ayo, 2012). In the Nigeria, e-payment is effecting payment from one end to another end through the medium of the computer without manual intervention beyond inputting payment data; it is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button (Asaolu, Dopemu & Unam, 2011).

Electronic payment systems come in different forms, some of the e-payment systems related to this study are: (1) Internet/Web is type of e-payment system involves transactions carried out over the Internet. It is a simple way of paying for online purchases directly from the customer's bank. It also offers the possibility of enjoying banking services from their homes or offices. (2) Mobile Banking is one of the latest ways of making payments through mobile phones. This involves sending a payment request through a text message (USSD) or banks mobile application. Mobile banking reduces the time and stress of using the credit card or cash as account details are already linked with the banks software. (3) Automated teller Machines (ATM) is an electronic banking outlet which allows members to complete transactions without the assistance of a member service representative or teller. Anyone with a credit card or debit card access an ATM as long as they are all on the same network. An ATM communicates through the ATM network so members can access their account information. (4) Point of Sales (POS) Terminals is a terminal that enables buyers make payments using payment cards such as (Visa, Master Card, verve, etc) issued to them by any bank in or outside Nigeria directly into other accounts.

2.1.2 *Automated Teller Machine Payment (ATMP)*

According to Okafor (2008) the ATM as an electronic device which allows a financial institution's customer to use a secured method of communication to access their accounts, make cash withdrawals or cash advances using credit cards and checking their account balances without need for human teller or cahier. Also, ATM is a machine designed for making variety of online payments such as utility bills, television subscriptions,

GSM recharges among others (Iwedi, Igbanibo & Uzo-ahunanya, 2018). However, available statistics on various e-payment channels in Nigeria as reported by CBN indicate that number of ATMs stood at 17,712 with an active card user of 29 million people, while the volume and value of transactions amounted to 336.77 million and N3.05 Trillion, at end-June 2017, respectively (CBN, 2017).

2.1.3 Point of Sales (POS)

Point of Sale terminals are deployed to merchant locations where users slot their electronic cards through POS in order to make payments for purchases or services instead of suing raw cash. As the POS terminals are online real-time, the customer's bank account is debited immediately for value of purchases made or services enjoyed. However, in Nigeria, the Point of Sale (POS) terminal was introduced by the CBN to drive home its cashless policy aimed at enhancing Nigeria payment system (Iwedi, Igbanibo & Uzo-ahunanya, 2018). Point of-sale machine is the payment device that allows credit/debit cardholders make payments at sales/purchase outlets. It allowed customers to perform the following services: retail payments, cashless payments, cash back balance enquiry, airtime vending and printing mini-statement amongst others.

2.1.4 Mobile Banking Payment (MBP)

This is a product that enables users to conduct fund transfer, make payment or receive balance enquiries on their mobile phones. Mobile banking is very popular and exciting to customers given the low infrastructure requirements and the rapid increase in mobile phone penetration in the country. Services covered by this product include account balance enquiry, funds transfer, recharging of phones, changing password and bill payments. Though the product is exciting, most customers are yet to fully buy into it in Nigeria. Hence, the apex bank and other financial institutions still have a lot to do in terms of increasing awareness of its product to the saving populace in the country (Woleola, 2017).

2.1.5 Web-Based Transfer (Internet)

This refers to electronic transfers which can be affected through the internet on personal computers. Bank customers who have subscribed to internet banking can do basic banking transactions via the web. Internet banking like mobile banking also uses the electronic card infrastructure for executing payment instructions and final settlement for goods and services over the internet between the merchants and the customers (Woleola, 2017). Commonly used internet banking transactions in Nigeria are settlement of commercial bills and purchase of air tickets through the websites of the merchants. Basically, this device enables a customer with a personal computer and telephone to screen his account, print his own statement of account and carry out transfer activities right in the office or at home (Gandy, 2017).

2.1.6 Tax Revenue Generation

The primary objective of a modern tax system is generation of revenue to help the government to finance the ever-increasing public sector expenditure (Eneojo & Gabriel, 2014). Similarly, Afuberoh & Okoye (2014), explained that the classical function of a tax system is the raising of the revenue required to meet the expenditure which are either the provision of goods and services which members of the public cannot provide such as defense, law and order; or the provision of goods and services which the federal and state governments feel are better provided by themselves such as health services and education (Afuberoh & Okoye, 2014). Tax revenue is an integral part of government total revenue that is derived from the payment of taxes imposed on the legal activities and incomes of entities of a country (Lin & Jia, 2019). Financing the infrastructural facilities of any nation depends on the tax system in relation to effective assessment, collection and remittance for proper accountability by the designated agencies (Nwarogu & Nwabueze, 2018). According to Holban (2007), taxation is expected to play three significant roles: generation of sufficient fund for financing public services and other social transfer; provision of incentives for more employment and efficient use of natural resources and reallocation of income. As so much is expected of from taxation, Nigeria, like other economics of the world follows the path of continuous tax reform to cope with the global economic realities.

2.2 Empirical Review

Adegbie & Akinyemi (2020), examined the effect of electronic payment system on revenue generation in Lagos State. The main objective of the study was to ascertain the effect of electronic payment system on revenue generation in Lagos State. Data were sourced with the aid of questionnaire distributed to 366 staff among the six (6) selected revenue generating agencies in Lagos State. Analysis of data was done with the use of descriptive statistics, while hypotheses were tested using multiple regression model at 5% level of significance. The result of the analysis revealed that electronic payment variables (automated teller machine and electronic fund transfer) have significant and positive effect on personal income tax. The study concluded that e-payment influenced revenue generation in Lagos State. They therefore recommended amongst others that for

government organization to seek to achieve revenue optimization, its leadership style should be transparent and flexible enough so as to further positive changes.

Mohammed (2020) examined the role of e-payment system on economic growth in Nigeria. Specifically, the study analyses the role of e-payment systems on economic growth using value of e-payment transactions and volume of e-payment transactions. The study used quarterly time series data for values of POS, ATM, Mobile, Internet transactions and real gross domestic product. The multiple regression model anchored on OLS was employed in data analysis to estimate the relationship between the research variables. Result of the analysis revealed that ATM and internet transactions is positive and insignificantly related to economic growth while there is a negative and insignificant relationship between POS transactions and real GDP in Nigeria.

Nwani, Nwaimo, kanu & Eke (2020) studied cashless policy and the Nigerian payment system. The broad objective of the study was to ascertain the effect of cashless policy on the Nigeiran payment system for the period 2007 to 2018. Cashless policy was proved with the use of cheques, fund transfer channels and automated teller machine secondary data were obtained from the CBN and partitioned into two periods 2007-2010 is the pre-cashless period while 2011 -2018 is the post cashless era. Descriptive and inferential analyses were used to analyze the two sets of data. Findings showed that the use of cheques as a means of financial settlement has failed and has been replaced with electronic payment systems, both ATM and interbank fund transfers as means of financial intermediation are increasing which has affected the economy positively

Agu & Agu (2020) evaluated the effect of cashless policy on economic growth in Nigeria. The study used secondary data obtained over the period 2010 to 2018 from the World Bank development indicator and Central Bank of Nigeria annual reports. The data was analyzed using unit root tests, contestation tests and Granger Causality tests. Results of the tests revealed that cashless policy has been veritable tool in influencing economic performance especially as it relates to automated teller machine transactions and point of sales.

Afaha (2019) studied the relationship between electronic payment systems and economic growth using monthly data covering the period of 2012 to 2017 in Nigeria. The Autoregressive Distributed Lagged Regression (ADLR) method was used in the analysis. The results indicate a significant positive relationship between electronic payment system and economic growth in terms of real gross domestic product (GDP) growth. The study suggests efforts be made to design or improve on the internet security framework to check online fraud, adequate legislation on all aspects of the operations of e-banking and cashless operations as well as an increase in public enlightenment and awareness programmes to entice the unbanked people in the banking systems and thereby double the real GDP growth.

Ofurum, Amaefule, Okonya & Henry (2018), evaluated the effect of E-taxation on Nigeria's revenue and economic growth: A pre-post analysis. The objective of the study was to ascertain the extent to which the implementation of E-taxation in 2015 has affected tax revenue, federally collected revenue and tax-to-GDP ratio. Data obtained were obtained from Federal Inland Revenue service and CBN statistical and economic reports on quarterly basis from the second quarter of 2013 to fourth quarter 2016. Analysis of data was done through the use of paired sample t-test and simple regression. The findings of the analysis revealed that the implementation of electronic taxation has not improved tax revenue, federally collected revenue and tax-to-GDP ratio in Nigeria. It was recommended amongst others that federal government through the federal Inland Revenue Services should conduct more enlightenment seminars in all 36 states in the country to increase the knowledge on the use of all electronic services on their platforms.

Ibe & Odi (2018) examined the effect of cashless policy on the economy of Nigeria. The specific objectives of the study were determine the effect of automated teller machine (ATM) mobile banking (MB) and effect of point of sales (POS) on the growth of the Nigerian economy. Time series data was collected from the Central Bank of Nigeria (CBN) for the period 2009-2016. ADF test was employed to check the presence of unit roots among the research variables. The result indicated that the variables are jointly integrated since their respective probabilities are less than alpha 0.05, and thus, hypotheses of no stationarity were rejected in all the cases. Findings from the regression analysis revealed that ATM and POS have positive statistical significance with the growth of the Nigerian economy, while mobile banking (MB) has a negative significant effect with the Nigeria's G.DP.

Olurankinse & Oladeji (2018) explored self-assessment, electronic taxation payment systems and revenue generation in Nigeria. The study population comprised of 3Q companies quoted in Nigeria stock exchange. Pearson's product moment correlation coefficient statistical tool and regression analysis were used to test the hypothesis by the application of SPSS Version 20.0. Results of the analysis indicated a position and significant relationship between self-assessment and e-taxation payments systems and revenue generation.

Ajape, Afara & Uthman (2017), evaluated the effect of E-tax system on Tax administration and Tax revenue generation in Lagos state Internal Revenue Service. The objective of the study was to determine the influence of an electronic system of taxation on tax administration efficiency and tax revenue generation in Lagos state Survey research design was adopted using a structured five point Likert scale questionnaire to obtain data. Data gathered were analyzed using descriptive statistics, while hypotheses were tested using the

multivariate analysis of variance (MANOVA) with the aid of SPSS. Major findings of the study revealed that respondents do not differ that e-tax system has enhanced revenue generating potentials of Lagos state. The study recommended that relevant tax authority should formulate and implement policies that would promote the sustainability of positive effects of the e-tax system and to train tax official on how to harness the benefits of administering taxes electronically.

Monica, Makokha & Namusonge (2017), investigated the effect of electronic tax system on tax collection efficiency in domestic taxes department of Kenya revenue authority (KRA). The objectives of the study were to find out the effect of electronic tax filing on revenue collection efficiency; examine the effect of staff competency on revenue collection efficiency and to ascertain the level of taxpayers' knowledge in operating electronic tax system in Kenya. The main data collection tools were questionnaires administered to the employees of KRA and taxpayers. Descriptive and inferential statistics were employed as data analysis technique. Findings from the study revealed that most tax payers strongly agreed that they were able to fully access and operate the tax system. Secondly, Employees competence was a significant predicator of the tax collection efficiency while taxpayers seeking clarifications on tax issues online is minimal.

Ndayisenga & Shukla (2016) ,evaluated the effect of electronic tax management system on tax collection efficiency in Rwanda. The research aimed to examine the effect of electronic tax management system on revenue collection by Rwanda Revenue Authority. Data were gathered through the means of structured questionnaires. Pearson's correlation analysis and regression analysis were used to analyzed and present the results of the study. In the findings of the study, it was established that electronic tax management system contributed to timely tax payment and reduced operational costs. The study therefore concluded that electronic tax management system contributed positively to revenue collection in Rwanda.

Maisiba & Atambo (2016), investigated the effect of electronic tax system on the revenue collection efficiency of Kenya Revenue Authority (KRA). The study was set to determine the effect of electronic tax system on revenue collection efficiency in Kenya Revenue Authority. The main data collection tools were questionnaires administered to the 102 targeted respondents; that included employees of KRA and taxpayers collected data from the field were analyzed using descriptive and inferential statistics. The key findings were that most respondents agreed that KRA has good electronic tax payment system and that for the KRA officials; most of them are conversant with its use and are trained. However, most taxpayers indicated difficulty in using the system and blamed lack of computer knowledge, poor internet and unstable power supply as major reasons.

Okiro (2015) investigated the effect of e-payment system on revenue collection by the Nairobi City country government. The study specifically sought to assess the level of compliance to budget estimates and effect of electronic payment adoption in revenue collection by the country government. Secondary data were sourced from the 18 Nairobi government department for the 3 years (2013-2015). Analysis of data was done using descriptive and inferential statistic. The result of the data analysis revealed that revenue collection significantly in Nairobi city has increase significantly after the adoption of electronic payment system in revenue collection.

Muturi &d Kiarie (2015), examined the effect of online tax system on tax compliance among taxpayers in Meru, county, Kenya. The objective of the study is to establish the effect of online tax system on tax compliance among small taxpayers in county tax district. Multiple regression and descriptive statistics were used in data analysis. The findings of the study were that online tax system does affect tax compliance level among small taxpayers in Merucounty. The study recommended that further study should be done to establish other factors that affect tax compliance among small taxpayers.

Okoye & Ezejiofor, (2014), investigated the impact of electronic taxation on revenue generation in Enugu, Nigeria; Data were collected using both primary and secondary sources, using frequency counts, mean score. The ordinary least square method was adopted using the multiple regression analysis and panel data regression method to test the fixed and random effects and test for level of significant at 1%. The finding was that electronic taxation can enhance internally generated revenue and reduce the issue of tax evasion in Enugu state. Another finding is that electronic taxation can prevent corrupt practices of tax officials. It also recommended that the Government should support the establishment of electronic tax administration so as to start ripping the benefit of high rate of compliance among taxpayers and electronic tax system should be implemented to reduce the diversion of government funds to private pockets.

2.3 Theoretical Framework
This study adopted eclectic theoretical approach, namely: expediency theory of taxation and Technological Acceptance Model. Therefore, this study was rooted in the two theories as stated below:
2.3.1 Expediency Theory of Taxation
The expediency theory of taxation was propounded by Buehler in 1936. The theory stated that every tax revenue collection system must pass the test of practicability, which must be the only consideration when government

is choosing a revenue collection system. The assumption of this theory is that the economic and social objectives of the government should be treated as irrelevant, since it is useless to have a tax which cannot be levied and collected effectively. This theory is relevant to the study in that electronic tax system is expected by FIRS to enhance revenue collection by creating an enabling technological environment that facilitates efficient assessment and revenue collection process. The expediency theory is therefore linked to this study since it seeks to explain the influence of administrative set up, such as efficient electronic tax payment system, revenue collection by tax officials.

2.3.2 Technology Acceptance Model

The second theory is Technology Acceptance Model (TAM). This theory was developed by Fred Davis in 1986. The Technology Acceptance Model is an information systems theory that models how users come to accept and use a technology. The theory is based on the assumption that the acceptability of an information system is determined by two main factors, being Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Perceived Usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance. Perceived Ease of Use (PEOU) is the degree to which a person believes that using a particular system would be free from effort. This theory is relevant to this study in the sense that the Technology Acceptance Model provides the bases for the adoption and implementation of the electronic tax system by the FIRS based on the assumption of its perceived usefulness on both the tax payers and tax officials.

III. METHODOLOGY

3.1 Research Design

Inaam and Jongbo (2014), described research design as an organized enquiring aimed at providing information in solving identified problem. Similarly in the views of Badiman and Ronet (2007), research design is the overall strategy that the researchers choose to integrate different components of the study in a coherent and logical way, thereby ensuring that research problem is effectively addressed. This study therefore adopted an ex-post facto design in other to address the problem of the study. This type of research design is suitable in this study, because the data is already in existence.

The study employed secondary data which were obtained from Central Bank of Nigeria (CBN) Statistical Bulletins, Federal Inland Revenue Service (FIRS) Publications and Official Publications of National Bureau of Statistical for the years under consideration.

3.2 Model Specification

In line with Klin, 2013, this study adopted linear multiple regression model (MRM). The explicit representation of the base line model as specified by the researcher for the purpose of determining the effect of electronic payment system on tax revenue generation in Nigeria was stated as follows;

$$TTR = \propto + \beta_1 ATMP + \beta_2 POSP + \beta_3 MBP + \beta_4 WB + et \ldots\ldots\ldots\ldots\ldots\ldots Equ\ (1)$$

Where:

TTR	= Total Tax Revenue
ATMP	= Automated Teller Machine Payment
POSP	= Point of sales payment
MBP	= Mobile Banking Payment
WBT	= Web-Transfer or Internet Transfer.
$\beta_1 \ldots \beta_4$	= Slopes of coefficient of the explanatory variables
$\propto$	= constant
ut	= error term.

3.3 Method of Data Analysis

The data analysis will involved the use of descriptive statistics test. Descriptive statistics was carried out in order to determine the characteristics of the research variable such the mean, standard deviation, minimum and maximum amongst others. Multiple regression test anchored on Ordinary Least Square (OLS) will also be performed to ascertain the statistical significance of the hypothetical relationship between the dependent and the independent variables. Multiple regressions will be evaluated using the conventional probability values (P-Value).The decision rules were anchored on the conventional probability values (p-value) associated with the regression outcome of the research base line model.

IV. RESULTS AND DISCUSSIONS

4.1 Unit Root Test

Unit root test was conducted using ADF statistic in order to validate the data employed in the study.

Table 1: Augmented Dickey –Fuller (ADF) Unit Root Test

Variable		ADF statistics	Critical values	Level	S/NS	ADF Stat.	Critical valves	Level	S/NS	Significance
ATM	-	4.8996	- 2.9911	1(1)	S	--	--	--	S	5%
POS	-	1.7448	- 2.9711	1(0)	NS	-3.3043	-30021	1(1)	S	5%
MB	-	2.3389	-2.9911	1(0)	NS	-3.3102	-3.1110	1(1)	S	5%
WBT	-	5.4729	- 2.9941	1(1)	S	--	--	--	S	5%
TTR	-	1.7982	-2.9911	1(0)	NS	-3.4362	3.0161	1(1)	S	5%

Source: Authors' Computation from E-views, version 10 .0, 2022

The table above under Augmented Dickey-Fuller test of unit root, only two variables (ATM and WBT) were stationary at level, while others (POS, MB and TTR) were not stationary at level; but when tested at first difference, the variables were all stationary. This implies that the data were expected to be free from spurious and misleading regression outcome.

4.2 Test of Research Hypotheses

Table 2: Regression Results

Dependent Variables: TTR

Method: least Square

Date: 6/3/22 Time: 2:10

Sample: 2013-2021

Included observation: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATMP	12.580862	1.157408	10.86986	0.003812
POSP	0.524688	4.408064	0.119029	0.222311
MBP	15.640871	5.330096	2.934445	0.043217
WBT	8.498064	2.402668	3.536928	0.011222
C	3.311599	0.081669	40.549033	0.000000
Re-squared	0.710351	Mean dependent var	0.428943	
Adjusted R-squared	0.814131	S.D dependent var	0.232890	
S.E of regression	0.138202	Akaike info criterion	-1.663560	
Sum square reside	1.732254	Schwarz criterion	-1.095546	
Log likelihood	52.83354	Hannan-quuinn criter	-1.035829	
F- statistic	0.382171	Durbin-Watson stat	2.336256	
Prob (F-statistic)	0.728042			

Source: Authors' Computation from E-views, version 10 .0, 2022

4.2.1 Research Hypothesis One

H0$_1$: Automated teller machine payment has no significant effect on tax revenue generation in Nigerian

Based on the result presented in Table 2, the coefficient of automated teller machine (ATM) payment was 12.58%, while its P –value was 0.0038. The parameter (ATM) is positive and significant in measuring tax revenue as confirmed by its P –value. Since 5% level of significance is greater than the P – value (0.0038), we rejected the null hypothesis and concluded that ATM payment has significant and positive effect on tax revenue generation in Nigeria.

This result is in conformity with the findings of Adegbie & Akinyemi (2020) who investigated the effect of electronic payment system on revenue generation in Lagos state Adegbie et al (2020) observed that automated teller machine had positive and significant influence on revenue generation in Lagos state. Similarly, the finding of Agu & Agu (2020) is also in agreement with the result of our study. According to Agu & Agu (2020), cashless policy has been veritable tool in influencing economic performance especially with respect to ATM transactions in Nigeria. On the other hand, our findings disagreed with the result of Mohammed (2020) who evaluated the role of e-payment system on economic growth in Nigeria. Mohammed (2020) found that ATM and internet transactions were positive but had insignificantly effect on economic growth in Nigeria

4.2.2 Research Hypothesis Two
Ho₂: Point of sales payment has no significant effect on tax revenue generation in Nigeria

Based on the regression result presented in table 3, the coefficient of point of sales (POS) payment was 0.52, while the P – value was 0.222. The parameter (POS) has positive and insignificant effect on tax revenue generation in   Nigeria. Since 0.05 level of significance is less than the P – value (0.222), the study accepted the null hypothesis and conclude that point of sales payment has positive and insignificant effect on tax revenue generation in Nigeria.

In line with the result of the study, Mohammed (2020) who studied the role of e-payment system and economic growth of Nigeria, Observed that point of sales had insignificant effect on the growth of the Nigeria's economy. However, the findings of Ibe and Odi (2018) disagreed with the result of our study. Ibe & Odi (2020) opined that point of sales has positive statistical significance with the growth of the Nigerian economy. The finding of Oyelami, Adebiyi & Adekunle (2020) is also in disagreement with the outcome of this study. They found that availability of POS machine increases consumers' spending decisions in Nigeria. This increases tax revenue generation through value added tax (VAT). The study conducted by Afaha (2019) on the relationship between electronic payment systems and economic in Nigeria, found that electronic payment variables have positive and significant influence on economic growth in Nigeria. This study by Afaha (2019) is in total contradiction with our findings.

4.2.3 Research Hypothesis Three
HO₃: Mobile banking payment has no significant effect on tax revenue generation in Nigeria.

Based on the regression result, the coefficient of mobile banking payment (MBP) was 15.64, while its P –value was 0.043. In line with the decision rules, the parameter of mobile banking payment has positive and significant effect on tax revenue generation as indicated by its P-value (0.043). Since 0.05 level of significance is greater than the P –value (0.043), the study accepted the alternate hypothesis and concluded that mobile banking payment has positive and significant effect on tax revenue generation in Nigeria.

Our findings is also in conformity with the result of Oyelami et al (2020) who observed that mobil banking services are critical determinants of e-payment systems adoption in Nigeria. The result of the study carried out by Okiro (2015) agreed with our findings. Okiro (2015) found that the adoption of electronic payment system has positively influenced the revenue collection performance in Nairobi City County. However, the findings of Ibe & Odi (2018) contradict with our result. Ibe et al (2018) found that mobile banking has negative significant effect on the Nigeria's gross domestic product

4.2.4 Test of Hypothesis Four
HO₄ Web-transfer payment has no significant effect on tax revenue generation in Nigeria

Based on the regression result presented in table 3, the coefficient of web-transfer payment (WBT) was 8.50, while the P–value was 0.011. In line with the decision rule guiding the study, the parameter of web-transfer payment has positive and significant influence on tax revenue as confirmed by the P-value, since 5% level of significance is greater than the P-value (0.011). Consequently, the study accepted the alternate hypothesis and concluded that web –transfer payment has positive and significant effect on tax revenue generation in Nigeria.

This result is in consistence with the findings of Eze (2020) who carried out a study on understanding the technologies for cashless economy on Nigeria's GDP growth Eze's study found that variables of electronic payment systems have shown positive and significant influence on the economic growth of Nigeria. Similarly, our findings conformed with the result of Adegbie & Akinyemi (2020) who observed that electronic fund transfer had significant positive effect on revenue generation in Lagos state. Moreover, the result of our study is also in agreement with the prior study of Nwani, *et al.* (2020) who opined that electronic fund transfer as means of financial intermediation are increasing and has positively influenced the economy.

V.   CONCLUSION AND RECOMMENDATIONS
5.1 Conclusion

The dwindling level of tax revenue occasioned by the prevalence of tax evasion was among the impetus that led the government to demand for cashless policy. Thus, electronic payment system is among the many responses to such demand. In line with the findings of the study, the study therefore concluded that the adaption of that electronic, payment system had positively and significant influenced tax revenue generation in Nigeria within the period reviewed.

5.2 Recommendations

In line with the findings, the study made the following recommendations:

i. Government should make further substantial improvement in the adoption of ATM with respect to availability of steady network in order to make it to be at par with that which is obtainable in developed economics so as to improve revenue from taxation

ii. The government should invest in its internet security framework to create a firewall against fraud and instill confidence in the citizens to adopt the use of POS which would contribute to aggregate consumption and improvement in tax revenue majorly through value added tax

iii. In order to be appreciative of the benefits emanating from the use of e-payment systems such as web-transfer, the government should ensure that there is steady power supply in the country.

iv. Government and private sectors should expand the necessary infrastructure by promoting the development of necessary technologies, recruitment of experts and expanding high speed information network as this would foster a strong foundation for e-payment.

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