







“E-tax system effectiveness in reducing tax evasion in Nigeria”

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ARTICLE INFO	Adegbola Olubukola Otekunrin, Tony Ikechukwu Nwanji, Damilola Felix Eluyela, Henry Inegbedion and Temitope Eleda (2021). E-tax system effectiveness in reducing tax evasion in Nigeria. <i>Problems and Perspectives in Management</i> , 19(4), 175-185. doi: 10.21511/ppm.19(4).2021.15
DOI	http://dx.doi.org/10.21511/ppm.19(4).2021.15
RELEASED ON	Friday, 05 November 2021
RECEIVED ON	Wednesday, 23 September 2020
ACCEPTED ON	Friday, 19 March 2021
LICENSE	 This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

43



NUMBER OF FIGURES

2



NUMBER OF TABLES

2

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 23rd of September, 2020

Accepted on: 19th of March, 2021

Published on: 5th of November, 2021

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Conflict of interest statement:

Author(s) reported no conflict of interest

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E-TAX SYSTEM EFFECTIVENESS IN REDUCING TAX EVASION IN NIGERIA

Abstract

This study examined how electronic tax system (E- tax system) reduces tax evasion in Nigeria. The survey sample was drawn from Federal Inland Revenue Service (FIRS) staff and small and medium-scale enterprise taxpayers registered in F.C.T., Abuja, Nigeria. Primary data was derived from a questionnaire administered to a population of 60 officials and employees of the FIRS and taxpayers at a small and medium-scale enterprise registered in F.C.T., Abuja, Nigeria. The secondary data used was extracted from the tax revenue collection report on the FIRS platform for 2000–2019 (20 years). The conclusive research design was used. General linear model and linear regression were used to analyze the data collected. The E-tax system was measured using actual tax revenues and the level of electronic tax services. In contrast, tax evasion was measured using tax compliance and mind-set of taxpayers towards E-tax system. Taxpayers' attitudes towards E-tax system, actual tax revenue, tax compliance and the level of electronic tax services were used as mediating and control variables; thus, results established a significant relationship, and this relationship is an adverse one. The work shows that an effective electronic tax system will significantly reduce tax evasion. Therefore, the proper implementation of the electronic tax system helps mitigate the problem of tax evasion that causes economic and social detriments in the tax administration system.

Keywords

E-tax, FIRS, fiscal policy, tax compliance, tax evasion

JEL Classification

H25, H26, K34

INTRODUCTION

Tax is of phenomenal importance to the government because of its major source of revenue. Government expenditure is a significant element of the Keynesian model of income determination and serves as an injection into the economy's model of income determination. The primary source of government revenue is borrowing and taxation. Industrially advanced countries, for which tax is a source of revenue, have benefited mainly and are still helping than developing countries due to differences in the level of administration, knowledge, and technologies used to ensure a significant revenue source. The inability of most less developed countries to leverage taxation benefits as obtained in industrially advanced countries is easily attributable to loopholes in the tax system, especially tax evasion. Ayua (1996) stated how the tax officials malpractices, tax evasion and avoidance, low tax yields characterized the Nigerian tax system. Webley et al. (1991) divided taxpayers into three groups – the taxpayers who never evade their taxes, those who always evade taxes, and occasionally evade their taxes. Before the electronic tax system, the Nigerian tax system was manual; the manual tax system was associated with many impediments like avoidance, evasion, malpractices of tax officials, bad government and other defaming activities causing a weak tax system a low revenue which is generated from the taxes. They considered these activities as

factors that precipitate economic sabotage, and they classified them as causes for the low development of Nigeria (Adedeji & Oboh, 2012).

The damages caused by tax evasion have adversely affected the government revenue as tax significantly affect income. It has become a chronic challenge that has led to a high loss of financial resources sabotaging the economy. Tax evasion has social and economic consequences. First, it makes citizens more unpatriotic and reduces tax compliance amongst taxpayers, reducing available funds to provide social amenities or developing society, making them see no need to contribute to government as they gain nothing from governance. Over the years, several tax reforms introduced via the FIRS were to discourage the act of evading and avoiding tax and generally mitigate the loopholes that restrain proper functioning of the country's tax system.

Webley et al. (1991, p. 128) opined tax evasion as "a complex and generally hidden behavior that can have significant economic and social consequences". The presence of tax evasion is a social phenomenon that can expressively reduce tax revenue with an adverse effect on the growth and development of the country's economy, which suggests the need for adopting the E-tax system. According to Night and Bananuka (2019), E-tax system is to improve its weak tax administration and to combat the vices associated with tax collection such as tax evasion, errors in tax remittance and tax officials' corruption. The collection of taxes enables the government to perform their responsibilities and make citizens see how taxpayer's money is being put to use, thus encouraging tax compliance.

It is believed that the electronic tax system can be used to resolve the problems and deficiencies of tax evasion and the administration of a tax system can benefit. This study empirically investigated the effect of an electronic tax system in reducing tax evasion. In line with extant studies, the electronic tax system was proxied by electronic tax services and actual tax revenue, while tax evasion was proxied by tax compliance and the attitude of taxpayers towards the e-tax system (Afuberoh & Okoye, 2014; Alake & Olatunji, 2012; Qassim et al., 2018; Segun, 2017; Ofurum et al., 2018; Olaoye & Atilola, 2018; Akpubi & Igbekoyi, 2019). This study focused on tax information and tax revenue reports, of which sample population was selected from 60 managers and employees of the Federal Inland Revenue Service and registered small and medium scale enterprises, Abuja, Nigeria, and 20-years tax revenue collection reports.

1. LITERATURE REVIEW AND HYPOTHESES

Electronic tax is an advent of technology into the tax system that will enable proper handling of the tax administration and its activities. Activities such as registration, assessment, filing of returns and making claims can be made using the computerized tax administration (Flossy et al., 2017). The electronic tax system is an online platform where taxpayers can access all services regarding tax and communicate with the responsible tax and financial authority (Wasao, 2014). In Nigeria, the electronic tax system is now part of the reform for collecting tax revenues. It is driven emphatically by the Nigeria Federal Inland Revenue Authority to achieve an efficient tax system, thus improve economic development. The advantages of implementing the electronic system for filing and pay-

ing taxes can be beneficial both for taxpayers and tax authorities. Taxpayers can quickly and timely access their tax portals and register to pay their taxes and submit tax returns anytime, anywhere: they can also store and retrieve their documented information. Tax authorities also have their workload reduced, where the costs and manual processes of handling tax payment issues and tax returns have been eased with the e-filing system (Taiwo, 2013).

Actual tax revenue is one of the variables used as a proxy for an E-tax system in this study. The E-tax system is a component of the revenue collection reforms by FIRS to improve tax collections and tax effectiveness, thereby rapidly increasing tax revenues (Atika, 2012; Omodero, 2019). The actual tax revenue on the pre and post electronic tax revenue was used to measure this study dur-

ing data gathering. This is the primary variable of electronic tax system because the actual tax revenue reflects the impact of electronic tax on the tax administrative system. Electronic tax service was also a proxy for an electronic tax system in this study, show how the electronic tax is operated and what means of operation is done (services). The level of electronic service was measured in the administered questionnaire.

Sikka and Hampton (2005) and Olatunde (2009) indicated that a significant social challenge is tax evasion as it has hindered the development of many economies around the world. This eminent issue has brought about global attention of several government and decision-makers as they seek a solution. Tax evasion is the act of remitting little or no tax than what should be paid (Fagbemi et al., 2010). Faseun (2001) noted that the failure of rendering one's tax to the pertinent tax authority is a widespread type of tax evasion in Nigeria. According to the provision of tax laws, tax evasion is a criminal offence subsequent with penalties, fines, and profound consequences like imprisonment. However, there are several reasons used to justify the incidence of tax evasion. These reasons are the following: illiteracy, inflated tax rates, public officers' corruption, embezzlement of revenues, weak administration in tax and tax laws, poor implementation of tax statutes and many others (Onyeka & Nwankwo, 2016; Obafemi, 2014; Mughal & Akram, 2012; Adebisi & Gbegi, 2013; Folayan & Adeniyi, 2018).

Tax compliance is a variable used as a proxy for tax evasion as it is an aspect of taxpayers' behaviour. For tax purposes, compliance is when taxpayers abide and adhere to tax laws to a positive extent (Mongwaketse, 2015). Introduction of the electronic tax system demands massive tax compliance (James & Alley, 1999). The attitude of taxpayers towards electronic tax system is another proxy variable used under tax evasion where the interest, preference and behaviour of individuals regarding the use of electronic tax system is examined. Davis et al. (1989) pointed out the attitude of taxpayers as the critical measurement used as a determinant of the technology of acceptance model (TAM), to examine and expound on the behavioral intention among taxpayers. The electronic tax system will function correctly only when

a positive attitude towards accepting this system and using it is present and on a large scale. This will enhance tax compliance, thus eliminating the tax-evading behavior.

1.1. Economic deterrence theory

This theory views and opines a rational individual to exploit the expected value from gambling with tax evasion, consider the benefits of evading tax against the risk of being caught and punished, and then pay tax because of the fear of being penalized when caught evading. This fear of being caught and punished when scheming tax evasion is the core of this theory. The theory also provides a good result that tax rates are a determinant of tax compliance (Allingham & Sandmo, 1972). This study adopts the Economic deterrence theory as its framework due to the perceived relevance to the research problem being the approach that explains the taxpayers' tax behavior. Specifically, it explains the tax-evading behavior of tax evaders. According to this theoretical model, taxpayers decide what and how much taxes they evade, as well as regarding gambling and risky decisions. The theoretical model gives a quantitative imprimatur to the beginning of the electronic tax system to eliminate tax evasion.

1.2. Fiscal exchange theory

The theory proposed the existence of the government's expenditures, available and accessible goods and services to encourage compliance among citizens. The primary concern of taxpayers is to get a form of public service in return for their tax payments. Here, the tax paid and public services are considered a contractual connection between the government and the taxpayers in that society (Fjeldstad & Semboja, 2001). The presence of positive benefits possibly will surge the chances that taxpayers will be compliant without any form of compulsion. Odd-Helge (2004) pointed out that, although most taxpayers cannot agree on the precise worth of what they earn from the government in return for their tax payment, arguably they have common expectations and perceptions about the government's terms of trade. Therefore, it is fair to conclude that the conduct of a taxpayer is influenced by their satisfaction or dissatisfaction with the government. Under an unfair tax system,

tax evasion can be regarded as a taxpayer's way of adjusting his term of trade with the government (Wandugo, 2014).

1.3. Technology Acceptance Model (TAM)

Davis (1989) developed this model and mentioned the psychological features affecting the development of technology. Through TAM, Davis established and validated improved ways to predict and explain the use of technology by individuals. Aligning people's behavior and their approach to technology, the basis for technology acceptance can be understood. Perceived effortlessness of use influences the perceived practicality of the technology, and together they determine the attitude and behavioral aim of the individual (Davis, 1989). This theoretical model predicts and explains users' behavior and the reason for accepting or rejecting technology.

1.4. Theory of Reasoned Action (TRA)

This is a versatile theory of behavior that maintains that individuals would use a system if the outcomes attached to it were beneficial. The theory extended to make abstract the behavioral patterns of individuals related to the use of technology. This theory is the foundation of the technology acceptance model. It enlightens on individuals' behavioral intention being a function of their attitude (Ajzen, 1991). Supporting the statements of Ajzen (1991) and Fishbein and Ajzen (1975), Hofmann et al. (2008) opined that a positive attitude of a taxpayer towards tax evasion means low compliance and likewise, an unfavourable attitude towards tax evasion implies a more compliant state of the taxpayer.

1.5. Empirical review

In Nigeria, the influence of taxation on revenue generation was examined by Afuberoh and Okoye (2014) by studying the federal capital territory and other selected states. They considered the two main categories of tax (Direct and Indirect taxes) and the problems that mitigate against a fair tax administration. Their findings were that taxation positively contributed to revenue generation and Gross Domestic Product (GDP), and that there

is a need to automate and modernize the tax system. Using Nigeria banks as a case study, Alake and Olatunji (2012) explored how electronic taxation affected tax evasion and tax avoidance with the primary objective, which was to establish how electronic tax would curb tax evasion and avoidance. Data for the study were sourced from both primary data in addition to secondary data. The result of their study concluded that using the electronic tax system in Nigeria would effectively reduce tax evasion and avoidance. In Nigeria, Olaoye and Atilola (2018) researched the influence of e-tax payment in revenue generation to determine how electronic tax has improved revenue generation in Nigeria. Tax revenues of six (6) years and the 3rd quarter, covering the 1st quarter of 2012 to the 2nd quarter of 2018. Findings showed that electronic tax has not significantly enhanced revenue generation in Nigeria.

Ofurum et al. (2018) investigated the influence of e-taxation on the Nigerian government's revenue and economic growth. They extensively studied how electronic tax since its implementation in 2015 has influenced tax revenue, revenue collected federally, and tax to GDP ratio, with the aid of data derived from Central Bank of Nigeria Statistical and Economic reports and FIRS. A pre and post of the electronic tax was analysed from the 2nd quarter of 2013 to the 4th quarter of 2016, and the results revealed that electronic tax had not improved the country's revenue. In Nigeria, Segun (2017) used Lagos state as a case study and studied tax evasion and electronic taxation. The main objective is to examine how the implementation of the E-tax system has curbed tax evasion in Nigeria. The research question was answered with the use of survey research design. The study showed the electronic tax system to have improved taxpayers' data management, thus, minimizing the incidence of tax evasion.

The adoption of electronic tax filing systems was conducted by Wang (2003) at the international level. In his research, he explained the features behind the adoption of the electronic tax systems. With the technology acceptance model, Wang (2003) introduced a new element to express a user's core belief towards the electronic system. This new factor, perceived credibility, was used to examine how computer knowledge influences the decision to use an

electronic tax filing system. At the end of the study, significant inferences on developing an effective electronic service and systems were mostly made for the government and the public. A survey conducted by Mongwaketse (2015) was to investigate taxpayers' attitude and perception in South Africa and the influence of filing tax returns electronically on tax compliance. Using a quantitative approach, questionnaires were administered to the target population, the result of which, when analyzed, showed that the perception and attitude of taxpayers were significantly positive and the e-filing system had improved tax compliance.

In the case study of Iraqi firms quoted on the Iraqi Stock Exchange, Qassim et al. (2018) employed primary data to examine how tax evasion methods were reduced via electronic taxation. Their research's objective was to highlight the E-tax system significance in minimizing tax evasion in these quoted firms, build up a projected model for the electronic tax system for tax administration and identify the benefits of employing electronic tax in co-ordinating a company. Findings from the study pointed that the utilizing electronic systems in tax job were the most favorable one out of the essential strategic alternatives implemented by countries to build up tax work in the GCT in the course of exploiting E-tax systems to raise the tax revenues that add to increasing revenue.

Limited research and mixed contributions from the empirical reviews were observed in this study pertaining to the electronic tax system and tax evasion measured by different variables. While a reasonable number of the studies agreed that E-tax system had a significant impact on tax evasion (Adeyeye, 2019; Qassim et al., 2018; Segun, 2017; Mongwaketse 2015; Sabitova & Khafizova, 2015; Alake & Olatunji, 2012; Wang, 2003), others disagreed (Ofurum et al., 2018; Olaoye & Atilola, 2018). There is insufficient research in the area of electronic tax and tax evasion. Findings from this research have led to this study as it seeks to fill these gaps and justify Nigeria's electronic tax system. From this literature, hypotheses in their null form were drawn and used to test the study as stated below:

$H0_1$: *E-taxation system has no significant impact on tax compliance among taxpayers.*

$H0_2$: *Pre e-tax revenue is not significant to the actual tax revenue in Nigeria.*

$H0_3$: *There is no significant association between taxpayers' attitude and E-taxation system.*

$H0_4$: *The level of tax compliance does not affect tax evasion.*

2. DATA AND METHODS

In investigating the E-tax system's effect on reducing tax evasion in Nigeria, the study employed a conclusive research design to generate a categorical statement between the variables. It employed cross-sectional and longitudinal research designs with the intention to use data to justify the presence of tax evasion and using the electronic tax system to reduce it (Oladipo et al., 2019). The technique used in the study is stratified random sampling, which enabled the target population to be grouped in categories. The target population includes FIRS staff and taxpayers of the small and medium-scale enterprise registered in the Federal Capital Territory, Abuja, Nigeria. Respondents from the target population were presented with a questionnaire. The population was 103, but 60 respondents were within reach and also filled their questionnaires. The study also covered pre and post electronic tax of actual tax revenues for a period 2000–2019 (20 years). Descriptive statistics, in line with Otekunrin et al. (2019), were used in data analysis. The results were displayed in tables, charts and graphs to achieve the study's objective and answer the research questions. For this study, the general linear and linear regression models were used (See Eluyela et al., 2020a, 2020b).

2.1. Model specification

The following model function was used in this study:

$$TE = f(ET),$$

$$ET = TE,$$

$$TE = (TC, ATP, ATR),$$

$$TC, ATP = f(ET),$$

$$TC, ATP = ETS. \tag{1}$$

The above function forms a general linear model, which will be multivariate as the control variables representing the dependent variable measure the independent variable that stands alone. The model shows that tax evasion is the function of an E-tax system.

For the variable of actual tax revenue, the specified model used is the linear model as the independent variable has its control variables – Pre-electronic tax revenue and post electronic tax revenue.

Transforming the functional representation of this equation in the linear regression equation, the following is obtained:

$$\begin{aligned}
 TE &= f(ET), \\
 TE &= ATR, \\
 ET &= PreT, PostT, \\
 ATR &= \beta_0 + \beta_1 PreT + \beta_2 PostT + e, \tag{2}
 \end{aligned}$$

where *TE* – tax evasion, *ET* – electronic tax, *ETS* – electronic tax service, *ATP* – attitude of taxpayers towards e-tax, *TC* – tax compliance, *ATR* – actual tax revenue, *PreT* – pre electronic tax revenue, *PostT* – post electronic tax revenue, and *e* – error term.

3. RESULTS AND DISCUSSION

A GLM was used to test the association between tax evasion and E-tax system. Specifically, multivariate tests were performed to establish the influence of the E-tax system on taxpayers’ tax compliance and attitude towards electronic tax. The results showed that the calculated F and significant

asymptotic probabilities were 65.9 ($P < 0.001$) and 196.8 ($P < 0.001$) for tax compliance and attitude of taxpayers, respectively, thus indicating a significant positive association between tax compliance and E-tax system on the one hand, as well as a significant positive association between the electronic tax system and the taxpayers’ attitude. The implication is that electronic tax system has a significant positive influence on tax compliance and attitude of taxpayers. A significant impact of the electronic tax system on tax compliance implies a reduction in tax evasion. Consequently, electronic tax system significantly influences tax evasion (see Table 1).

Furthermore, the adjusted coefficients of determination (R-Square) for tax compliance and attitude of taxpayers were 0.946 and 0.982, respectively. The implication is that 94.6% of the variation in tax compliance is elucidated by the electronic tax system, and 98.2% of the variation in tax attitude is elucidated via the electronic tax system. This shows that electronic tax system has a significant influence on tax evasion.

3.1. Graph presentation

This section shows the graphical interpretation of the influence of the E-tax system on tax compliance and the attitude of taxpayers towards electronic tax (see Figure 1).

Figure 1 graphically interprets the influence of E-tax system on tax compliance among taxpayers. The graph reveals that the greater the effective administration of electronic tax services, the more compliance will be recorded in the tax system.

Figure 2 explains the frequency of electronic tax services and the attitude of taxpayers towards the electronic tax system. Drafted from the computed analysis, the implication of the graph means that an effective administration of the electronic tax

Table 1. General linear model (GLM)

Source: Researchers’ field work.

Dependent variable	Type III Sum of squares	Mean square	R-square	Adjusted R-square	F	Sig.
Electronic tax compliance	38.388	2.399	0.961	0.946	65.895	0.000
Attitude of taxpayers towards electronic tax	42.073	2.630	0.987	0.982	196.758	0.000

Note: Predictors: electronic tax service. a. Adj. R sq. – 0.946. b. Adj. R sq. – 0.982.

Source: Researchers' field work.

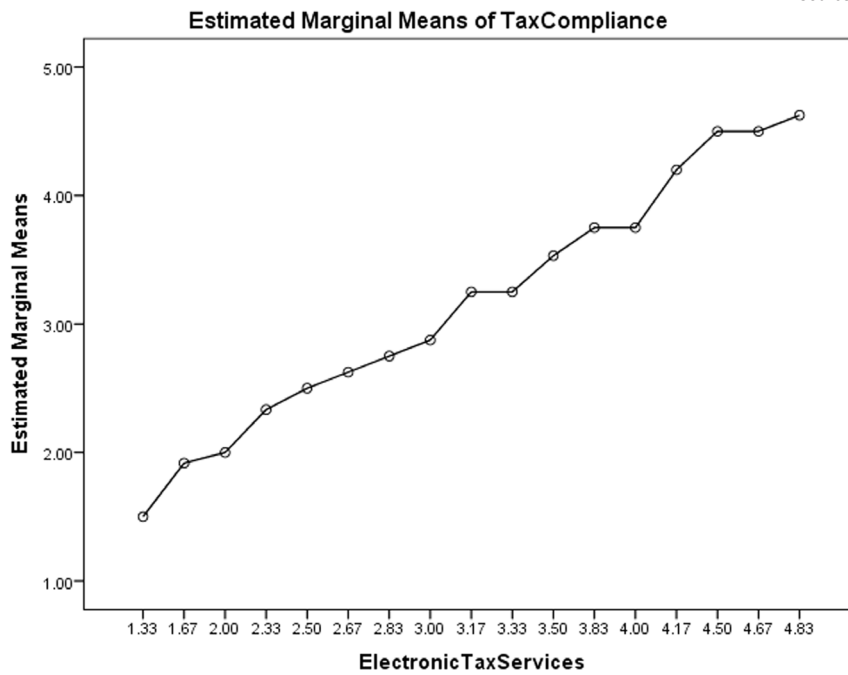


Figure 1. Influence of E-tax System on Tax Compliance in Nigeria

Source: Researchers' field work.

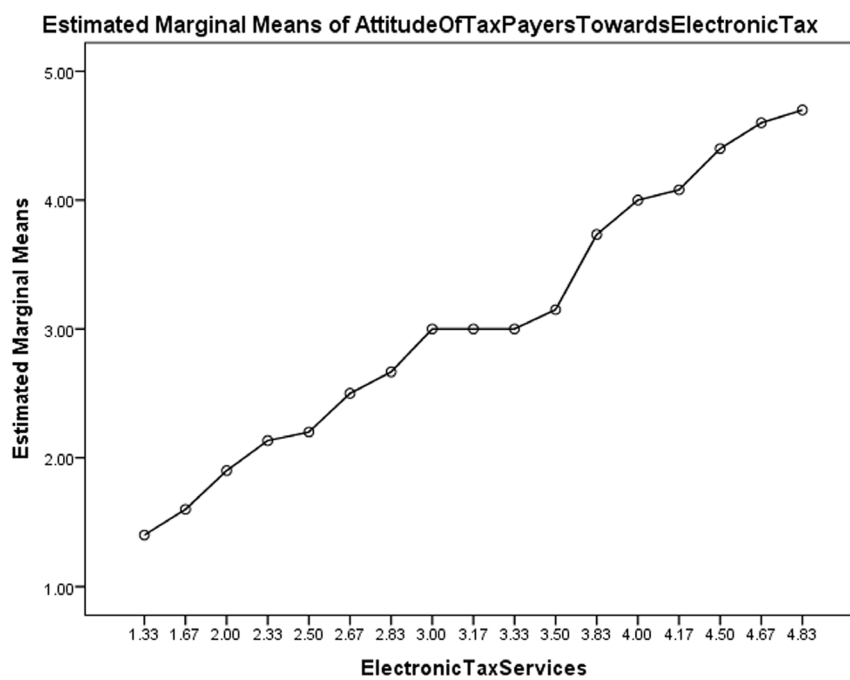


Figure 2. Frequency of E-tax services and Attitude of Taxpayers

system will lead to a positive shift in taxpayers' attitude towards the electronic tax system; and the more encouraging the attitude of taxpayers become, the services of electronic tax can be proved useful.

Hence, the following hypotheses would be rejected:

H_0 : E-taxation system has no significant impact on tax compliance among taxpayers.

Table 2. Regression result of the variable (2000–2019)

Source: Researchers' field work.

Variable	Co-efficient	Standard error	t-statistic	Sig.
(Constant)	-666.177	133.876	-4.976	.016
Pre e-tax revenue	.046	.333	.138	.899
Post e-tax revenue	.268	.063	4.285	.023
<i>R</i> sq. – 0.997				
Adj. <i>R</i> sq. – 0.996				
<i>F</i> -statistics –579.977				
Prob>0.000				
Durbin-Watson –2.666				

Note: Dependent variable: Actual Tax Revenue.

H_{0_3} : There is no significant association between taxpayers' attitude and the E-tax system.

H_{0_4} : The level of tax compliance does not affect tax evasion.

3.2. Regression analysis

The regression analysis is used in this section to analyze the secondary data (Table 2).

$$\text{Regression Model: } -666.17 + 0.046\text{PreTR} + 0.286\text{PostTR} + e.$$

The regression analysis results shown in Table 2 indicate a positive association between pre-tax revenue and an electronic tax system. The co-efficient of pre e-tax is .046 and indicates that a unit change in pre-e-tax revenue leads to a 4.6% change in actual revenue. This indicates a very minute effect. The *t*-statistic and associated asymptotic significant probabilities were 0.138 (0.899), respectively. Consequently, the null hypothesis is accepted that pre-e-tax revenue is not significant to Nigeria's actual tax revenue. However, the co-efficient of post e-tax is 0.268, thus indicating that a unit change in post e-tax revenue leads to a 26.8% change in actual revenue. This value is considerable. The *t* statistic and associated asymptotic significant probabilities were 4.285 (0.023), respectively. Consequently, the null hypothesis that post e-tax revenue is not significant to Nigeria's actual tax revenue is rejected. In other words, the post e-tax revenue is significant to actual tax revenue. Thus, the electronic tax system significantly influences actual tax revenue in Nigeria. The data were further subjected to normality test using 1 sample Kolmogorov-Smirnov test; the result showed a *t*-statistic of

0.149 and 0.290 for pre e-tax and post e-tax revenues, respectively, with an associated asymptotic significant probability of 0.200 and 0.197. This asymptotic significant probability is not less than 0.05 – the assumed level of significance; therefore, the null hypothesis that the data is normal cannot be rejected.

Based on the normality test results, an independent sample *t*-test was carried out to compare the pre e-tax actual revenue with the post e-tax actual tax revenue. Levene's test for the equality of variances reviewed that the computed *F* was 2.683 with a significant asymptotic probability of 0.119. This value is not less than 0.05. Therefore, the null hypothesis that equal variances exist is accepted. The pre e-tax had a mean of 2399.61 with a standard deviation of 385.3 and a standard error mean of 435.14. The post e-tax revenues' corresponding values were 4332.2, 913.05 and 408.3, respectively, thus resulting in a mean difference of 932.5. A *t*-test for the significance of this mean difference was 4.419 and a significant asymptotic probability was 0.06, thus signifying that the test was significant at the 1% level. Thus, it can be concluded that the 99% level of confidence of actual tax revenue after the introduction of electronic tax system was significantly higher than that obtained before the introduction of the E-tax system.

Consequently, E-tax system has appreciably influenced tax revenue in Nigeria. This result confirms the result of Alake and Olatunji (2012), which showed a significant connection between the electronic tax system and tax revenue. Therefore, the null H_{0_2} , which states that pre e-tax revenue is not significant to Nigeria's actual tax revenue, will be accepted.

CONCLUSION

In addition to examining this effect, tax measures such as tax compliance, the attitude of taxpayers and actual tax revenue were used. The result showed a significant connection of tax compliance and E-tax system, the attitude of taxpayers and E-tax system, and actual tax revenue with the post electronic tax revenue, and an insignificant relationship between E-tax system and pre-electronic tax revenue. The results derived using these variables have both significant and insignificant relationship with electronic tax and tax evasion. This means that a significant positive influence of electronic tax system on these variables invariably leads to a decline in tax evasion. The study considered the effect of electronic tax on tax evasion and produced diverse results. Based on the investigation, the result indicates the electronic tax system has a connection with tax evasion. The relationship in the form of adverse effect, when an effective electronic tax system reduces tax evasion and the presence of evasion means a weak electronic tax system.

This finding shows that the relationship between E-tax and tax evasion is an adverse and electronic tax system, since its introduction has improved taxpayers' tax revenue and behavior. In conclusion, the study gave diverse result on the influence of the E-tax system on tax evasion. Thus, tax authorities and government must ensure effective implementation of the electronic tax system to be productive in the revenue they will derive and boost the tax administration system. Tax authorities should also ensure that in their base (an area they have authority over), taxpayers are appropriately and electronically registered as this will enable proper identification of every taxpayer in a particular area. The government should ensure that tax revenues are directed towards the fulfilment of social obligations (road repairs, social amenities, etc.). This would encourage tax compliance amongst taxpayers.

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