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Impact of E-Tax Filing on Tax Revenue Generation in Nigeria

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Abstract

The study investigated the impact of e-tax filing on tax revenue generation in Nigeria. The study developed three research objectives, which are to; analyse the contributions of e-tax filing on government tax revenue in Nigeria, analyse the contributions of e-tax filing on the increase in non-oil and oil tax revenue in Nigeria. In essence, the study compared whether there is significant difference in government tax revenue, non-oil tax revenue, and oil tax revenue in Nigeria prior to e-tax filing (2011-2014) and post e-tax filing (2016-2019). The study made use of quarterly data, which was sourced from the Federal Inland Revenue Service. The one-way Analysis of Variance (ANOVA) was adopted as analytical technique. Based on the results obtained from the study, it was found that e-tax filing only had significant influence on oil tax revenue in Nigeria, but did not significantly impact on total government tax revenue and non-oil tax revenue in the country. Based on these results, the study recommends that the Government should establish a well-equipped database on taxpayers to easily identify all possible sources of income of taxpayers for tax remittance. Also, the study recommends that the Federal government through the Federal Inland Revenue Services (FIRS) should conduct more enlightenment programmes in the country, so as to increase the knowledge and awareness on the use of all electronic services on their platform.

Keywords: Tax, Revenue, E-tax, E-filing, Nigeria.

1. Introduction

The role of government has been advocated as a paramount intervention geared at promoting economic growth and development of a country. Through fiscal expenditures on healthcare, education, infrastructure, peace and security, and social security; the government commits itself to growth and development of the country. For the government to achieve its fiscal expenditures, it requires revenue. Revenue could come from capital receipts (such as external borrowing from World Bank and International Monetary Fund) or recurrent receipts (such as grants, administrative revenues, commercial revenues, and taxes) (Anyanwu, 1997).

Government borrowing and tax are one of the most extensively used fiscal tools for generating revenue for the government all over the world. Since external debt is fund that will be repaid with interest upon maturity, it is an unfavourable tool for generating revenue for the government (Siddique, Selvanathan & Selvanathan, 2015). This leaves tax as a reliable and effective means of generating revenue for the

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government (Soyode & Kajola, 2006). For most developed countries of the world, tax is mostly used to generate revenue for the government (Ihenyen & Ebipanipre, 2014). This cannot be said for developing countries like Nigeria, where the tax system in the country has the poor political will, weak legal structures, and low voluntary compliance among taxpayers, and shortage of tax workers with its negative impact on full realisation of the expected tax revenue (Oriakhi, 2002). As a matter of fact Leyira, Chukwuma and Umobong (2012) agree that the tax system in Nigeria is poorly functional; therefore, it makes it difficult for the government to rely upon it for generating revenue. The failure of the country's tax system has made external debt an attractive means of generating revenue (Udoffia & Akpanah, 2016). Albeit, the burden of external debt on economic growth, has raised criticisms and concerns in the literature that the Nigerian government should improve the tax system as a reliable means for generating its revenue (Ihenyen & Ebipanipre, 2014; Ijirshar, Joseph & Godoo, 2016).

One means to improve the tax system and its capability to generate tax revenue is via technology which is known to have played tremendous roles in easing the process of doing things since its advent. Since technology was invented by cavemen during the Paleolithic era (Stone Age), to aid various human activities such as hunting, food preparation, and survival, it has evolved ever since. From the industrial revolution of the 18th century to mass produce; to the discovery of the internet of the early 20th century, which has turned the world into a global village and finally to the introduction of artificial intelligence during the mid-20th century, technology has become an essential feature of mankind (Crawford, 2013; Maad, 2015). Its use has been deployed in the collection of taxes, to make taxation more effective and efficient. Several countries across the globe have used technology in collecting the tax. It involves submitting all tax returns using an electronic medium, to the tax authority. It is convenient, fast, and effective means for corporations, businesses, and households to submit their tax returns to the relevant tax authority (Akpu & Ohaka, 2017).

E-filing tax administrative system was incorporated into Nigerian tax administration in 2015 as a medium of improving the country's tax collection system. This was after the International Monetary Fund (IMF) had advised all countries to adopt an integrated tax administration system between 2004 and 2006 (Newman & Ekhator, 2019). The Federal Inland Revenue Service (FIRS) installed the Integrated Tax Administration System (ITAS) but in order to lay the necessary infrastructure for its implementation later partnered with the Nigerian Interbank Settlement System (NIBBS). E-filing was further extended to all parts of Nigeria in 2017, thereby making available to taxpayer all transactions relating to tax administration including obtaining tax clearance certificate services.

Despite all these, there is no formal framework put in place by the Nigerian government to encourage the use of technology in administering taxes in the country (Abdulsalam, 2019). Several studies have revealed that the unavailability of a legal framework guiding e-filing in Nigeria has contributed to poor tax filing in the country (Oyedele, 2016). CBN Statistics hint that tax revenue may not have contributed meaningfully to government revenue in Nigeria. In particular, government total revenue in Nigeria as enshrine in budget increased from ₦6.9 trillion in 2015 to ₦10.26 trillion by the end of 2019; which is about 49% increase. However, tax revenue increased from ₦4.71 trillion in 2014 to ₦5.02 trillion by the end of 2019 (FIRS Statistics, 2020). Hence, this casts doubts on the effectiveness of e-filing in raising government revenue in Nigeria. With this, the Nigerian government may have to rely on foreign debt as a means of generating revenue. Before, reaching this conclusion, it is important to verify whether e-filing can be used to improve government revenue. Hence, this study will engage an empirical investigation to ascertain whether e-filing can be used to improve government revenue in Nigeria.

The literature on e-filing and government revenue is gradually gaining larger interests among researchers and government policy makers globally. Yet, literature on this topic in Nigeria is scanty. Already, Ibrahim, Lamidi and Alias (2017) have shown that e-filing does not significantly impact on the volume of fund generated through tax in Nigeria. The study relied on primary data analysis, which is susceptible to bias responses when administering questions. Also, Ofurum, Amaefule, Okonya and Amaefule (2018); as well as Olaoye and Atilola (2018) engaged secondary quarterly data obtained from the FIRS and found no significant relationship between e-filing and revenue generation in Nigeria. These studies made use of various tax components such as Company Income Tax (CIT), Value added Tax (VAT)

and Petroleum Profit Tax (PPT) which they analysed using T- Test but this study make use of different tax components such as non-oil tax revenue, oil tax revenue and total Government Tax Revenue which was analysed using ANOVA estimation technique. This is to provide robust insights on whether e-filing affects any of government tax revenue, non-oil tax revenue or oil tax revenue in Nigeria. Hence, this paper will proffer solutions to the following research questions;

1. Does E-Tax filing contribute to increase in government tax re venue in Nigeria?
2. Does E-Tax filing contribute to increase in non-oil tax revenue in Nigeria?
3. Does E-Tax filing contribute to increase in oil tax revenue in Nigeria?

To drive this study three hypotheses were formulated;

Hypothesis 1:

H_0: There is no significant impact of E-Tax filling on government tax revenue in Nigeria.

H_1: There is significant impact of E-Tax filling on government tax revenue in Nigeria.

Hypothesis 2:

H_0: There is no significant effect of E-Tax filling on non-oil tax revenue in Nigeria.

H_1: There is significant impact of E-Tax filling on non-oil tax revenue in Nigeria.

Hypothesis 3:

H_0: There is no significant effect of E-Tax filling on Oil tax revenue in Nigeria.

H_0: There is significant effect of E-Tax filling on oil tax revenue in Nigeria.

This paper is structured into five parts, which are: introduction, review of literature, methodology, results of data analysis, and conclusion. An appendix for the datasets is also provided.

2. Literature Review

This section examines the extant literature on e-filling and tax revenue generation in Nigeria. The first part provides the conceptual review of e-tax filling while second part reviews the related theory. Finally the empirical review closes this section.

Conceptual Review of E-Tax Filling

Electronic filing, otherwise known as e-tax filing is the procedure of releasing returns from tax payer to the tax authority, via the internet. This is a digitalized method of remitting tax returns which is believed to bring about several benefits, which include: time-saving and convenience. This system warrants that the taxpayer is self-compliant and is capable of computing their tax payable to the tax authority independently (Monica, Makokha & Namusonge, 2017). This implies that their inability to make use of e-tax filing method due to incompetence will leave them with no other options than to adopt the manual means of filing their taxes. E-tax filing covers all individual returns and business returns. It is a popular tax collection method mostly used in developed countries. E- filling tax system started in the United States of America in 1986 and extended to other countries such as Australia in 1987; Canada in 1993; Egypt in 2013, and Nigeria in 2015 (Oforum, Amaefule, Okonya & Amaefule, 2018).

Akpu and Ohaka (2017) highlight that e-tax filing offers numerous advantages in tax collection. Mostly, it offers taxpayers with the convenience of paying their taxes; as taxpayers can file their taxes anytime and anywhere, without disrupting their activities, mostly for those who go to work. Agrawal (2012) includes that e-filing provides taxpayers with security and privacy in tax payment. Babatunde (2018) agrees that these benefits would help integrate small and medium enterprise owners to pay their taxes. Thus, e-filing will help to improve tax compliance and tax evasion problems; thereby help the tax administrators to raise sufficient funds for the government (Okauru, 2011; Wamathu, 2014). However, electronic tax filing has its shortcomings. First, not everyone can afford an electronic internet-enabled device like a computer or an android phone. This could deter taxpayers from making use of e-filing to remit their taxes. Also, everyone is not technology and internet knowledgeable.

The introduction of e-filing assumes that every taxpayer has knowledge in making use of the internet and can operate technological devices. This may not be so, as older generations are more susceptible to the problems of operating a technological device and making use of the internet. This is mainly because many of the technological advancements occurred after their prime age. Therefore, if a population has a greater number of its working population in the older generation, it would become

difficult to make them file their taxes via electronic filing. Also, e-filing assumes that taxpayers can compute their taxes, which is not realistic (Monica, et al, 2017). Such persons would require the services of a tax expert, which might require some fees. Hence, the targeted aim of e-filing to encourage tax compliance and raise revenue for the government, may not always be achieved.

Theoretical Review

A better way to appreciate the contributions of e-filing to government revenue is by understanding two related theories. These are the theory of technology acceptance model (TAM) and the theory of planned behaviour. The theory of technology acceptance model is credited to Davis (1986) as an offshoot of the theory of the reasoned action (TRA) theorised by Fishbein and IcekAjzen (1957) as a means to understand human behaviour, via personal attitude and social norms which are societal expectations. This model explains how users come to accept the use of an information technology. The purpose of the model is to predict the acceptability of a tool and to identify the modification which must be brought to the system in order to make it acceptable to users. This model suggest that the acceptability of an information system is determined by two major factors namely, perceived usefulness and perceived ease of use. Perceived usefulness is defined as being the degree to which a person believes that the application of a system will improve his performance. On the other hand perceived ease of use refers to the degree to which a person believes that the use of a system will be effortless.

As demonstrated in the theory of reasoned actions, the technology acceptance model postulates that the use of an information system is determined by the behavioral intention but on the other hand that the behavioural intention is determined by the person attitude towards the use of the system and also by his perception of its ability. According to Davis (1986) the attitude of an individual is not the only factor that determines his use of a system but is also based on the impact which it may have on his performance. Therefore the user will probably accept the use of a system if he perceive that it will enhance his performance. TAM postulate a direct link between perceived usefulness and perceived ease of use. Given two system with same features, a user will vote for the system he find easier to use (Dillon and Morris, 1996).

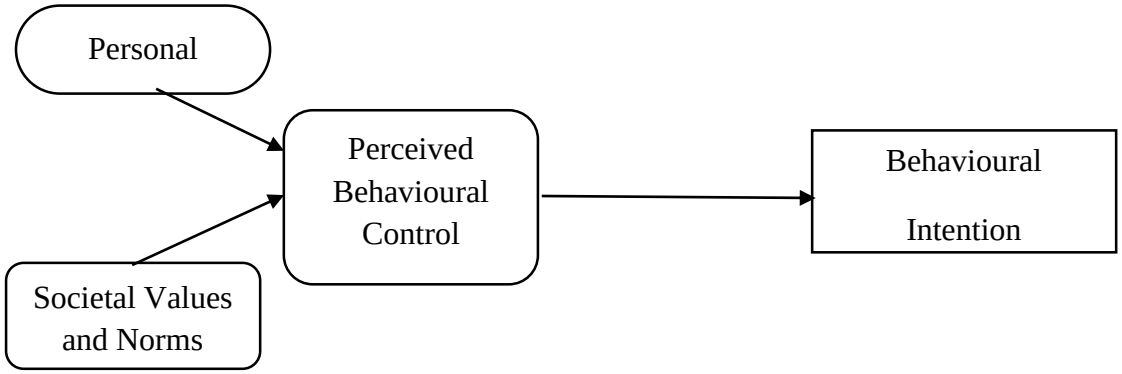
Davis (1986) further explained that the perceived ease of use also influence individual attitude significantly through two main mechanism namely self efficiency and instrumentality. Self efficiency is a concept developed by Bandura (1982) which postulate that the more the system is found to be easy to use the higher his sense of efficacy. Buttressing this further, Lepper (1982) suggest that the more a user feel at ease with the usage of a tool or machine the more he feels he is in control of what he is doing. Efficacy is one of the main factors underlying intrinsic motivation (Bandura, 1982; Lepper, 1982). Perceived ease of use can also contribute in an instrumental way in improving a person's performance. Due to the fact that user will have to deploy less efforts with a tool that is easy to use, he will be able to separate efforts to accomplish other tasks (Davis, 1986). Buttressing this fact further Sussman and Gifford (2019) note that people exhibit a personal attitude that also influences their behavioural pattern. With these, the theory of reasoned action asserts that individual action is influenced by personal attitudes as well as social values.

In confirming the theory of acceptance model (TAM), Davis, Bagozzi and Warshaw (1989) identified human perception of ease of use and usefulness of technology as determinants of the adoption of technology rather than attitude and social norms. Muhammad et al. (2015) in agreement with the above stated clearly that perceived ease of use and perceived usefulness are embedded in societal norms and personal attitude, which were not clearly distinguished by Davis, Bagozzi and Warshaw (1989). Note that the acceptance of technology is psychologically and socially induced; wherein the perceived usefulness and perceived ease of use of the technology would determine whether the adoption of technology nationwide (or within a region) will be effective or not.

Also, the theory of planned behaviour can be used to understand whether e-filing can be used to generate revenue for the government. The theory is accredited to Icek Azjen, (1985) who provided a theoretical explanation that links personal beliefs to the personality traits (Albarracin, et al, 2001). The theory has similar resemblance with Fishbein and IcekAjzen's theory of reasoned action, such that it acknowledges the role of personal attitude and social norms in determining human actions (Conner, et al, 2003). Albeit, TRA was unable to provide succinct disparity between actual behaviour and behavioural

intention. As such, Ajzen (1985) reformed the basics of the TRA and created the theory of planned behaviour by including perceived behavioural control as a third variable that determines human actions. This variable by Ajzen notes that individual experience and judgment of an action plays an important role in determining the behaviour of the person. Therefore, the theory of planned behaviour asserts that personal attitude, subjective norms, and non-volitional behaviour (personal behavioural control) are determinants of behavioural intent and actual behaviour (Albarracin, Johnson, Fishbein & Muellerleile 2001). As such, these three variables are in constant interaction to determine the behaviour of a person (C onner, Kirk, and Cade & Barret 2003). This can be represented in diagram 1 as:

Diagram 1: Theory of Planned Behaviour



Source: Author's Compilation

From the diagram, the capacity of personal attitude and social norms to influence the behavioural intention of an individual is hinged on personal behavioural control that judges whether the action will be beneficial or harmful. If benefits are expected, there is a likelihood that the individual will act, otherwise, the person will not take the action.

Based on the technology acceptance model (TAM) and the theory of planned behaviour, one can understand why e-filing can be an effective means of generating revenue for the government in Nigeria. A personal attitude such as ease of use and usefulness of the e-filing system serves as an important factor in determining whether the e-filing system will be used. Also, societal norms in the form of a legislative framework, organisational practice and general best business practices are important in influencing people to engage the e-filing service system. Where this framework does not exist, individuals are left to their free will without any persuasion to adopt the e-filing system. However, the final decision to use the e-filing system would thereby be determined by personal behavioural control of whether there are positive experience and judgment in using the technology. If the individual has poor experience in using the technology, there is a likelihood that the e-filing system will not serve as a means of generating revenue for the Nigerian government. In such a case, the existence of a strong legal framework has the possibility of engendering the culture and thereby influencing the attitude of taxpayer to further embrace the e-filing system.

Empirical Review

There are several empirical literature that offer some insights on the impact of e-filing on government revenue in Nigeria. An earlier study was conducted by Ofurum, et al (2018); which investigated the impact of e-tax on tax revenue in Nigeria. The study made use of quarterly data from 2013 to 2016, using paired sample statistic to analyse the data. Data were obtained from the FIRS and CBN Statistics. Descriptive analysis showed that pre-e-filing taxes were higher than post-e-filing taxes. Statistical analysis results found that the introduction of E- filling tax system has not significantly impacted tax revenue in Nigeria.

Similarly, Olaoye and Atilola (2018) investigated the effect of e-tax filing on tax generated revenue in Nigeria. The study made use of more recent quarterly data that spans from 2012-2018. Data were sourced from the Federal Inland Revenue Services and the CBN Statistical Bulletin. T-test was employed to provide statistical results; while emphasis was on determining whether there is a significant difference in

government revenue in the pre and post era of e-filing (that is 2012-2014, and 2016-2018). The paper found no significant difference in pre and post- E filling government revenue generation. With this, the study concluded that e-filing is not significantly responsible for government revenue in Nigeria.

In another study, Olaoye and Atilola (2019) conducted a similar study which set out to determine the effect of e-taxation on fiscal revenue generation of Oyo State in South-Western region Nigeria. The study made use of primary data, which was sourced using a well-structured questionnaire. The study made use of a hundred sample size for its analysis. Interestingly, the study found out that illiterates prefer the traditional method of paying taxes, implying that these set of persons meant that e-filing was not an effective means of collecting taxes; whereas those who were enlightened and educated helped to ensure that e-filing significantly contributed to revenue generation for the study. Consequent upon these results is the role of education in advancing the effectiveness of e-filing as a method to generate fiscal revenue.

Also, Alade (2018) conducted an empirical investigation that examined the impact of e-tax on fiscal revenue in Nigeria. The study adopted a different methodology by making use of company income tax and value-added tax as measures of tax sources. The data for the study spanned from 2012-2018 while omitting 2015 as the base year when e-filing was introduced. Therefore, the analysis covers two periods: pre-E- Tax filing (2012-2014) and post-e-filing (2016-2018). Data was sourced from the FIRS and CBN. The study just like other studies made use of the paired sample t-test and found a positive but insignificant variation in government revenue during pre and post-E-Tax filing periods.

Nnubia (2020) examined the impact of e-taxation on revenue mobilisation in Nigeria, covering quarterly periods of 2012-2018. Similar to the method adopted by Alade (2018), the study by Nnubia (2020) covers two periods: pre-e-filing (Q1 2012 to Q1 2015), and post-e-filing (Q2 2015-Q4 2018). The study made use of regression analysis. Company income tax, value-added tax, and capital gain tax were used as proxies of tax sources in Nigeria. At 5% level of significance, the regression estimates revealed that both company income tax and value-added tax had a positive significant effect on revenue generation during periods of Q1 2012 to Q1 2015; whereas company income tax, value-added tax, and capital gain tax all had a negative impact on revenue generation during periods of Q2 2015 to Q4 2018, with only significant impact from value-added tax. With these results, the study shows that the adoption of e-filing has not benefitted revenue generation in Nigeria.

Akpubi and Igbekoyi (2019) examined e-filing impacts on tax compliance among small and medium scale businesses in Lagos State, using primary data. A sample size of two hundred and eighty-one (281) was drawn for analysis. The study made use of regression analysis to provide statistical results. E-filing was decomposed into awareness, perceived ease of use, and tax compliance cost. Results of the regression analysis showed that creating awareness of e-filing had a positive significant impact on tax adherence; perceived ease of use had a positive but insignificant impact on tax compliance; whereas tax compliance cost had negative insignificant impact on tax compliance. With these results, the study concluded that the cost of e-filing discourages e-filing tax usage, while perceived ease of use and promoting the awareness of E-Tax filing help to increase tax compliance among taxpayers.

Also, Ibrahim, Lamidi & Alias (2017) examined perceived usefulness and acceptance of tax E-filing system as measures of determining how effective the e-filing system can be used to generate fiscal revenue for both Malaysia and Nigerian governments. The study made use of primary data for its analysis, while descriptive statistics were used to analyse the datasets for both countries. The outcome of the study revealed that perceived usefulness is a significant determinant of e-filing system usage in Malaysia, but not for Nigeria owing to the role of government in supporting technological expansion in both countries.

Extending this empirical review to international contest we reviewed the study by Lai (2008) which investigated the impact of E-Tax filling on the growth of tax revenue and the GDP of Malaysia.The study made use of both primary and secondary data. The finding from the research which applied descriptive and regression estimation techniques revealed a significant impact of E- Filling on tax revenue and by extension the GDP of Malaysia. In another related study on Malaysia by Nasir (2015) who set out to examine the benefit of E-Tax filling over manual filling using data between 2004-2011. The estimation techniques adopted was just the simple trend analysis which revealed that there was low adoption of E-Tax filling (5%) which was traced to low level of technological development in Malaysia.

The study conducted by Pippin and Tosun (2014) on electronic tax filing in United State of America was set out to showcase factors that affects the application of E-Filling in USA. Using data from 1999 to 2007 which were sourced from IRS, SOI, BEA and BLS. The study noted that E- Filling of tax was low in rural communities with low population. But interestingly education was discovered to have negative impact on E- filling contrary to theory. In another study in Turkey by Allahverd, Alagoz and Ortakapay (2017) using secondary data from 1993 to 2016. This data was partitioned to pre- e- filling period (1993-2004) and post e- filling period (2005-2016) which was analysed using Mann-Whiting U Test. The empirical result shows that there was significant impact of E- tax filling on revenue even as it optimise the cost of tax collection.

3. Research Methods

This section of the study provides a research methodology needed to analyse the research questions stated in the introductory part. This section explains the research design used, source of data, and method of data analysis.

Research Design

The study makes use of the correlational research design, which is often used to determine the relationship among variables in a research study. Hence, this study makes use of the correlational research design to determine whether e-filing influences government revenue in Nigeria.

Sources of Data

Secondary data used for this study were sourced from Central Bank Quarterly data from the Federal Inland Revenue Service (FIRS). Period of the data spans from pre- e-filling period of Q1 2011 to Q1 of 2015 and post e-filling period of Q2, 2015 to Q4 2019.

Method of Data Analysis

The data obtained were analysed using one-way analysis of variance (ANOVA). This is a statistical technique used for comparing the variance in the group means within a sample, when concerned with only one independent variable. Hence, it was used to examine whether there is a significant difference in pre and post-government tax revenue in Nigeria, based on e-filing adoption.

4. Data Analysis and Discussion of Results

This section examined the analysis of data beginning with descriptive analysis to trend analysis and the test of hypothesis and discussion of findings

Descriptive Analysis

The descriptive gives a brief overview of the sample of statistics of the data such as mean, median, minimum and maximum values, skewness and Jarque-Bera statistics as presented in Table 1

Table 1: Descriptive Statistics

Statistics	Oil Tax Revenue	Non-Oil Tax Revenue	Total Tax Revenue
Mean	561.15	463.34	1024.49
Median	566.80	419.84	1138.04
Minimum	176.75	100.05	336.81
Maximum	891.45	972.02	1564.57
Standard Error	35.29	41.28	62.85
Standard Deviation	199.63	233.50	355.52
Kurtosis	-0.90	-0.50	-0.89
Skewness	-0.05	0.47	-0.50
Range	714.70	871.97	1227.76
Sum	17956.83	14826.82	32783.65
Confidence Level(95.0%)	71.9729	84.18569	128.17843
Count	32	32	32

Source: *Author's Compilation using Microsoft Excel*

The descriptive statistics of the data sets used in the study is shown in Table 1. It could be seen that, oil tax revenue averaged ₦561.2 billion during the period of Q1 2011 to Q4 2019. Non-oil tax revenue averaged ₦463.3 billion; while total tax revenue averaged ₦1.02 trillion. Kurtosis values are lower than 3.0, which is an indication that there are no outlier values in the data sets. That is, an increase in tax revenue in Nigeria was uniform during periods of Q1 2011 to Q4 2019. Skewness of the series which shows the degree of asymmetry or departure from symmetry of the distribution reveal that two of the three variables are negatively skewed while one is positively skewed. Also the standard error of the distribution of the variables shows that they are well distributed which suggest that there is no outlier in the variables.

Trend Analysis

The trend analysis of the oil tax revenue and non-oil tax revenue is shown on table 2. This tend to place side by side the Non oil Tax Revenue and Oil Tax Revenue in total tax revenue in Nigeria dichotomising it to Pre - E filling and post E- filling periods. This is with the view to demonstrate how E-Tax filling has influenced tax revenue generation.

Table 2: Data for Oil tax Revenue and Non-Oil Tax Revenue.

Periods	Oil Tax Revenue	Non-Oil Tax Revenue	Total Tax Revenue	E-filing
PRE				
Q1 2011	236.7522	100.0545	336.8067	0
Q2 2011	307.0558	132.1112	439.167	0
Q3 2011	888.2278	528.6971	1416.9249	0
Q4 2011	891.4452	379.6086	1271.0538	0
Q1 2012	857.1621	315.3061	1172.4682	0
Q2 2012	743.9502	523.279	1267.2292	0
Q3 2012	798.3226	567.7399	1366.0625	0
Q4 2012	815.8699	385.9929	1201.8628	0
Q1 2013	800.6496	406.0818	1206.7314	0
Q2 2013	793.4257	421.388	1214.8137	0
Q3 2013	520.4811	243.4377	763.9188	0
Q4 2013	551.8105	551.8105	1103.621	0
Q1 2014	638.0883	418.2858	1056.3741	0
Q2 2014	639.2683	815.9021	1455.1704	0
Q3 2014	594.7995	604.4335	1199.233	0
Q4 2014	581.7913	421.9916	1003.7829	0
Q1 2015	573.3	844.87	1418.17	0
POST				
Q2 2015	325.03	558.19	883.22	1
Q3 2015	495.39	956.32	345.24	1
Q4 2015	388.66	717.15	1451.71	1
Q1 2016	176.7478	168.5012	1105.81	1
Q2 2016	328.0916	421.8619	749.9535	1
Q3 2016	323.579	365.3805	688.9595	1
Q4 2016	329.3897	168.9782	498.3679	1
Q1 2017	338.299	158.7024	497.0014	1
Q2 2017	338.299	398.1883	736.4873	1
Q3 2017	390.7045	388.7793	779.4838	1

Q4 2017	493.6067	316.3392	809.9459	1
Q1 2018	644.78	208.2592	853.0343	1
Q2 2018	523.8523	810.443	1334.2953	1
Q3 2018	626.3839	753.998	1380.3819	1
Q4 2018	672.5694	760.0463	1432.6157	1
Q1 2019	493.2199	493.2199	986.4398	1
Q2 2019	502.9935	897.6151	1400.6086	1
Q3 2019	592.5475	972.0214	1564.5689	1
Q4 2019	522.6686	728.3654	1251.034	1
Source	CBN Statistical Bulletin	FIRS	FIRS	Dummy variable

Note: E-filing Variable; where 1 = period of e-filing, 0 = period of no e-filing

A closer look at the three variables shows that there was no significant difference between tax revenue in the pre- e- tax filling revenue and post e- tax filling revenue.

Test of Hypothesis

One-Way ANOVA is used to test the three hypothesis formulated for this study.

Hypothesis 1: E-Tax filling does not significantly increase government tax revenue in Nigeria

Table 3 present the result of the one-way ANOVA test for hypothesis 1.

Table 3: Impact of E-filing on Government Tax Revenue in Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	146718.578	1	146718.578	1.167	.289
Within Groups	3771497.799	30	125716.593		
Total	3918216.378	31			

Source: *Author's Compilation using SPSS 23*

Table 3 shows the impact of e-filling on government tax revenue, using one-way ANOVA statistic. From the results, the probability value ($p>0.05$) is not statistically significant at 5% level of significance because the probability is higher than 5 percent. This shows that e-filing does not significantly impact on government tax revenue in Nigeria. This is in agreement with the findings in past literature in Nigeria which noted that E-Filling does not significantly influenced tax revenue positively (Ofurum, et al, 2018; Olaoye &Atilola, 2018; Alade, 2018). Since the theory of planned behaviour specified that personal attitude and social norms play great role in the determination of adoption of E-Filling, publicity should be adopted to enlist people interest in the application of E-Filling of taxation in Nigeria. This position was buttressed by Akpubi and Igbekoyi (2017).

Hypothesis 2: E-Tax filling does not significantly increase Non-Oil tax revenue in Nigeria

Table 4 presents the one way ANOVA test of hypothesis 2

Table 4: Impact of E-filing on Non-Oil Tax Revenue in Nigeria

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	44594.343	1	44594.343	.813	.374
Within Groups	1645594.100	30	54853.137		
Total	1690188.443	31			

Source: *Author's Compilation using SPSS 23*

Table 4 shows that the probability value ($p > 0.05$) is not statistically significant at 5% level of significance. This is because the probability is higher than 5 percent. Hence, e-filing does not significantly impact on non-oil tax revenue in Nigeria. This result remotely is in tandem with the Theory of Reasoned Action (TRA) which theorised that individual action is influenced by personal attitudes as well as social values. The level of education of the work force in Non-Oil sectors is very low hence their low perception of the adoption of E-Tax filling with its negative effect on the tax revenue.

Hypothesis 3: E-Tax filling does not significantly increase Oil tax revenue in Nigeria

Table 5: Impact of E-filing on Oil Tax Revenue in Nigeria

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	353087.275	1	353087.275	12.006	.002
Within Groups	882282.166	30	29409.406		
Total	1235369.441	31			

Source: *Author's Compilation using SPSS 23*

In table 5, the probability value ($p < 0.05$) is statistically significant at 5% level of significant. Hence, e-filing significantly impacts on oil tax revenue in Nigeria. This result agreed with the theory of technology acceptance Model which theorised that the ease of use of technology is the determinant of the adoption of such technology. The level of education of work force in Oil sector is very high hence the ease of the adoption E-Tax filling in the sector with its positive influence on the oil tax revenue in Nigeria. This argument is in consonance with the assertion of Olaoye and Atilade (2019) that level of education assist in the adoption of E-tax filling. This finding also is in agreement with the finding in previous literature that stipulate that perceived ease of use and promoting the awareness of E-Filling help to increase tax compliance and hence tax revenue (Akpubi & Igbekoyi, 2019; Ibrahim, Lamidi & Alias, 2017).

Discussion of Findings

The insignificant positive impact of E- tax filling on tax revenue in Nigeria is worthy of note. This imply that the introduction of E- Tax filling as a fiscal policy in tax revenue collection has not yielded the expected dividend. The outcome of this article empirical result was in agreement with the findings of Amaefule et al (2018) which noted insignificant positive effect of E- Tax filling on the tax revenue in Nigeria. Also the result of this article empirical work was in agreement with that of Olaoye and Atilola (2018). This findings is therefore suggesting that concerted effort should be made to ensure the benefit of E- Tax filling is maximised in Nigeria in future.

It was further revealed that the introduction of E- Tax filling does not significantly impact on non-oil tax revenue collection in Nigeria. This finding could be associated with the theory of Reasoned Action (TRA) which posit that the individual action is influenced by personal attitude and social values. It was observed that the low level of impact of E- Tax filling in the non-oil tax revenue is not unconnected with the low level of education of players in this sector. This suggest that more robust policy action should be geared towards educating them of the benefit of E- Tax filling.

Finally the impact of E-Tax filling on revenue generation from oil sector of Nigeria was found to be statistically significant. This result was in tandem with theory of Technological Acceptance Model which posit that the ease of use of technology is the determinant of compliance with directive to apply E- Tax filling approach.This was further buttressed by the empirical findings of Ibrahim and Alias (2017 as well as that of Akpubi and Igbekoyi (2019). The high level of education of participants in the oil sector made it easy for them to adopt E-Tax filling with its great implication on the tax revenue collected from the sector as also pointed out by Olaoye and Atilade (2019). It is good to sustain this tempo with fiscal policy instruments that will guarantee further improvement in both oil and non-oil sectors of Nigerian economy in future.

5. Conclusion

The analysis revealed that the adoption of e-tax filing system poorly contributes to revenue generation in Nigeria. Specifically, this pertains to government tax revenue and non-oil tax revenue, as e-tax filing significantly improves oil tax revenue in Nigeria. Based on these results, tax revenue has not increased significantly when compared to the pre-electronic tax era. Going by the outcome of the study, the researcher made the following recommendations:

First, Governments should establish a well-equipped database on taxpayers to be able to identify all possible sources of income of taxpayers in the country. Second, the Federal government through the Federal Inland Revenue Services (FIRS) should conduct more enlightenment programmes in the country to increase the knowledge and awareness on the use of all electronic services on their platform. Finally,

Federal Inland Revenue Services should ensure that the website is easily accessible to all and that there should be strong collaboration between the government, tax administrators and taxpayers in Nigeria.

Suggestion for Further Studies

This paper could be improved on further by introducing other intervening or moderating variables that could influence the outcome of the analysis tremendously. We therefore suggest this as a good area to focus future research exercise.

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