

Digitalization and Effective Tax Administration in Nigeria

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Abstract

The fourth industrial revolution of the developing nations seem to be anchored on digitalization of processes, hence the need to ensure effective methods of collecting government revenue to ensure maximum provision of goods and services for the citizenry. This study examined the imperativeness of digitalization in tax administration in Nigeria. The study employed quantitative research method and ex-post facto research design. The study covered a period from 2010 to 2021 which sums up to twelve years. Data on the independent variable, being digitalization (proxy by ICT) was sourced from secondary materials and was analysed with linear regression linking it to the dependent variable (proxy by tax revenue and tax evasion). The result of the analysis reveals the adjusted R square as -0.028 and a computed p-value of 0.406 which indicates that ICT has no significant low adverse effect on tax revenue in Nigeria. It also reveals the adjusted R square of 0.38 and the computed p-value of 0.061 in respect of the second hypothesis which indicates that ICT has no significant low positive effect on the level of tax evasion in Nigeria. It is therefore concluded that digital economy does not have a significant effect on tax administration in Nigeria. It is recommended from the study that laws and processes be set in place to ensure that the tax authorities across all levels in the state are not left behind in the transition to the digital economy.

Keywords: Digitalization, ICT, Tax Administration, Tax Evasion, Tax Revenue.

Introduction

With the break down in the barriers to trade across geographical locations and with the transition to the fourth industrial revolution, the challenges of tax evasion and generation of adequate revenue from tax experienced by tax authorities are minimized by the application of ICT To this end, Ayodeji (2016), identified tax administration as collusion between revenue officials and taxpayers, tax evasion activities, errors arising from manual computations, inadequate management of taxpayers' database amongst others.

Digitalization on the other hand, is bringing innovation to the order of economic and social processes within our country (Etim, Jeremiah & Dan, 2020). Adeoye and Olaoye (2014), opined that these innovations ought to cause an equal reaction that should lead to changes in the existing laws and in the implementation of existing laws. Ibrahim, Jeremiah and Ithnin (2018), explains that a digital economy is built firmly on the foundation of information communication technology (ICT). Therefore, it is imperative that tax administrators need to embrace ICT in revolutionizing their processes in order to curb some of the challenges faced with manual processing. Numerous studies in this direction have produced various results. Chatama (2013), opined that information technology is an integration of digital technologies into tax administration practice. He identified Information Technology as the adoption of digital technologies to modify a model as it relates to tax administration in all ramifications in line with the global trend, with the aim of creating value from the use of advanced technologies, by exploiting digital network dynamics for the benefits of the improved tax administration and tax compliance by tax payers (Ganyam, *et al*, 2018). Hence, given the advent of internet, it becomes pertinent that tax authorities adopt ICT as tax administration strategy. According to Chatama (2013), the use of ICT has taken the centre stage in the nation's economic activities and tax administration cannot afford to exist with traditional tax rules, which are grossly ineffective in handling global business and transaction trends driven by ICT.

These studies can be broadly classified into two based on their findings. The first stream of studies show that ICT can lead to a negative growth in tax revenue and improves the administration processes (Ajala & Adegbe, 2020; Olatunji & Ayodele, 2017; Oseni, 2016). The importance of tax revenue cannot be overemphasised especially with the emergence of the fourth industrial revolution.

This study is therefore designed with the main objective to assess the effect of a digitalized economy on tax administration in Nigeria. While the specific objectives are formulated thus;

- i. To assess the effect of information communication technology on tax revenue in Nigeria;
- ii. To determine the effect of information communication technology on tax evasion in Nigeria.

The following research questions were posed in order to achieve the specific objectives of the study namely:

- i. To what extent does information communication technology affect tax revenue in Nigeria?
- ii. What is the effect of information communication technology on tax evasion in Nigeria?

Review of Related Literature

Conceptual Review: Digitalized Economy

This is simply described as an economy driven by information and communication technology (ICT) in order to achieve accelerated productivity (OCED, 2014). Mesenbourg (2011), identified three parts that make up the digital economy which are Power supply, the infrastructure, and e-commerce. While the infrastructure refers to the human capital, telecommunication network and the gadgets programmed to connect humans, e-business refers to the processes set by businesses over this electronically processes. Finally, e-commerce refers to the exchange of goods and services or values

electronically. Digital economy is referred to as the new economy where information will be available and will be used to enhance business operations at a reduced cost and to meet various customers' expectations through the use of ICT devices (Tapscott, 2017). This is made possible through the breaking of barriers due to mobile and communication technology inked on the internet.

Tax Revenue

Tax revenue can be seen as a basic source of government revenue. Tax shows the level of activities a government and can carry-on without incurring debt (Brautigam, 2018). Nainyenju (2010), states that a critical factor to the collection of tax revenue is the system put in place. To further elucidate on this, Onyeka and Nwankwo (2016), states that the level of tax collected is a reflection of the quality of the tax management system put in place. According to Omolehinwa and Naiyenju (2015), tax revenue is a fiscal tool in the economy used in achieving certain macroeconomic objectives. They further show that tax revenue is gathered into the federation account and distributed among the federating units (Federal, State and Local government) of Nigeria.

Tax Evasion

Tax evasion is an illegal action in which the taxpayer attempts to reduce tax liability by dishonest means (Onyeka & Nwankwo, 2016). Aguolu (2019), enumerated examples of acts that constitutes tax evasion such as failure to pay tax, under-casting income, over-casting expenses, deliberate omission or misstatement of transactions to be included in the annual returns. All of these are aimed at reducing tax liability but not within the provisions of the law. Technically, it seems impossible to measure tax evasion because if such taxes were known, they wouldn't be evaded. However, Onyeka and Nwankwo (2016), provides how this can be measured in literature by arriving at tax evasion as a sum product of the difference between budgeted tax and actual tax. This can be further explained to be logical as targets which forms the budgeted are set based on realizable items. Hence, anything short of this, shows that such expected revenues in the form of tax have escaped the government tax revenue collection purse and classified as being evaded.

Theoretical Review

The theory of reasoned action which is also used as a communication discourse as a theory of understanding, forms the theoretical framework for this study. The theory was enunciated by Fishbein, Martin and Ajen, Icek in 1980. The premise of the theory states that, individuals or entities' actions are based on their intentions. And Intention, they posited is based on the attitude, norm of the environment and behavioural control. In other words, the person's intension to perform a behaviour is the main predictor of whether or not they actually perform that behaviour. The theory is being criticised for basing all actions on intentions (Ogden, 2013). However, Hagger and Chatziasarantis (2015), were able to explain between affective attitudes and instrumental attitudes and therefore, basing every action on intention whether magnified or not. Therefore, they were able to justify the validity of the theory. The theory is considered suitable for this study in that it seeks to explain relationship between the independent variable and dependent variable. It shows that ICT will be used in tax management only if the eve of digitalization in the economy is seen to have a significant effect on tax revenue or on the eve of tax evaded.

Empirical Review

Scholars have examined the theme of this study in various dimensions. Some of the studies are shown below, in order to understand the extent of work done on the theme of the study. For instance, Schaefer and Spengel (2012), carried out a study adopting a qualitative research design in order to examine the effect of ICT on international corporate taxation. They found out that ICT facilitates tax shift from host countries of subsidiaries to the host country of the parent country.

Similarly, Otien, Oginda, Obura, Aila, Ojera and Siringi (2013), conducted a study in Kenya

in order to assess the effect of ICT on revenue collection in Kenya by the use of the survey

research design. They revealed that there is a positive relationship between ICT and the effectiveness and efficiency of revenue collection.

On a larger scale, Koyuncu, Yimaz and Unver (2016), carried out a study among 157 countries with the aim of examining the impact of ICT on tax revenue. The ex-post facto research design was used. It was revealed that ICT penetration has a positive significant association on tax revenue.

Onuoha and Dada (2016), substantiated tax audit and investigation as imperatives for the achievement of an efficient tax administration in Nigeria. Their study adopted an expository

approach using content analysis of existing literatures. The doubt and sociological theories

were used to frame up the conceptualization of the topic. The study revealed that tax audit and investigation are inevitable to improve the collection of tax revenues in Nigeria. The study also confirmed that there is a high prevalence of non-compliance currently among individuals and companies in the country.

In Nigeria, Oseni (2016), conducted a study with the objective of assessing the effect of ICT on tax administration in Nigeria. The qualitative research method was used adopting content analysis to process the data obtained. The result of the study showed that ICT will expose the activities of tax evaders.

Also in Nigeria, Olatunji and Ayodele (2017), examined the effect of ICT on tax productivity in south western Nigeria using the survey research design. The data gathered were analysed using the regression and Pearson correlation moment. They revealed that ICT affect tax productivity in south western Nigeria.

McCluskey, Franzsen, Kabinga and Kasese (2018), conducted a study to assess the effect of digitalization of the economy on tax revenue in Africa. The qualitative research design was used. The findings from the study shows that digitalization of the economy has an inverse effect on tax compliance level in Nigeria.

Etim, Jeremiah and Dan (2020), carried out a study to assess the effect of digitalization of the economy on tax compliance in Nigeria. The survey research design was used. The findings from the study shows that digitalization of the economy has an inverse effect on tax compliance level in Nigeria.

Ajala and Adegbe (2020), examined the effect of ICT on tax assessment which is significant. Also, according to the economic deterrence theory, we expect that individuals who perceived tax as difficult are more likely to be tax compliant. The

elements of tax administration are various factors which have the possibility of increasing tax compliance within a given context (Fadjar, 2012).

From the empirical review, it shows that both the quantitative and qualitative research methods have been used in examining both the theme of this study. However, most of the quantitative studies have adopted the survey research design, thereby creating a methodological gap. Hence, this study is aimed to fill this gap by using the ex-post facto research design which was used to provide empirical evidence from Nigeria.

Methodology: To reach the specific objectives of this study, the following hypotheses stated in the null form are expressed below:

- i. H_0 : There is no significant positive effect of information and communication technology on revenue in Nigeria.
- ii. H_0 : There is no significant positive effect of information and communication technology on tax evasion in Nigeria.

The ex-post facto research design is adopted in this study. Secondary data were collected on the variables (ICT, tax revenue and tax evasion) for a period ranging from year 2010 to 2021 which adds up to 12 years. The simple linear regression was used in analysing the data in order to examine the effect of the explanatory variables. While the analysis of variance (ANOVA) is used to measure the significance of the regression result. The linear regression is as shown below:

$$Y = f(x)$$

$$\text{Tax management} = f(\text{information and communication technology})$$

Mathematically, this can be written as follows:

$$TR = \beta_0 + \beta_1 \text{ICT} + e \text{ -----i}$$

$$TE = \beta_0 + \beta_1 \text{ICT} + e \text{ -----ii}$$

Where:

TR = Tax revenue (Dependent Variable)

TE = Tax evasion (Independent Variable)

β_0 = Intercept where independent variables are zero

$\beta_1 \text{ICT}$ = Information and communication technology

e = error term

Table 1. Measurement of Variables

S/NO	VARIABLE	TYPE	MEASUREMENT	SOURCE
1	ICT	Independent Variable	Measured by number of ICT users	Statisticc.com
2	Tax Revenue	Dependent Variable	Measured by the tax total revenue collected and pooled in the	CBN 2018 Statistical Bulletin

			Federation account (Audu, 2020)	
3	Tax Evasion	Independent Variable	Measured as the difference between budgeted tax revenue and actual tax revenue collected (Onyeka and Nwankwo, 2016).	FIRS Website

Source: Researcher's work, 2023.

Data Analysis and Discussion of Findings

The result of the inferential statistical analysis carried out is as displayed below:

Test of Hypotheses

Hypothesis One

H_0 : There is no significant positive effect of information and communication technology on tax revenue in Nigeria.

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343 ^a	.118	-.029	.08947

a. Predictors: (Constant), LGICT

Table 2. Shows that there is a low adverse effect of information and communication technology on the level of tax revenue in Nigeria. This is represented by the adjusted R square of -2.9%. This means that the higher the eve of ICT, the lower the tax revenue in Nigeria.

Table 3. ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	.006	1	.006	.800	.406 ^b
Residual	.048	6	.008		
Total	.054	7			

a. Dependent Variable: LGTR

b. Predictors: (Constant), LGICT

Table 4. Coefficients^a

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.719	3.478		1.932	.102
LGICT	-1.461	1.634	-.343	-.894	.406

a. Dependent Variable: LGTR

Table 4 highlights the integers of the independent variable and the coefficient contained in the regression mode that was used in analysing hypothesis one. It shows that the value of the intercept is positive, while that of the independent variable is negative which suggests a negative effect of information technology on tax revenue.

Hypothesis Two

H₀: There is no significant positive effect of information and communication technology on tax evasion in Nigeria.

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685 ^a	.469	.381	7000.45042

a. Predictors: (Constant), Information and Communication Technology

Table 5 shows that information and communication technology has a low positive effect on the level of tax evasion in Nigeria. This is shown as 38.1%, which means that the higher the cost of debt the level of public expenditure in Nigeria.

Table 6. ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2604014.683	1	2604014.683	5.307	.061 ^b
Residual	243784.764	6	40630.74		
Total	55477.447	7			

a. Dependent Variable: Tax Evasion

b. Predictors: (Constant), Information and Communication Technology

Table 6 reveals that the computed p-value is 0.000 which is lower than the set p-value thereby rendering the null hypothesis rejected and the alternate hypothesis which states that cost of public debt des have a significant effect on public expenditure is accepted.

Table 7: Coefficients

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-13021.879	5602.273		-2.324	.059
information Communication Technology	95.776	41.573	.685	2.304	.061

b. Dependent Variable: Tax Evasion

Table 7 shows the value of the integers of the regression model that was used in analysing

hypothesis two. It shows the value of the intercept and the independent variable are positive.

Discussion and Policy Implication of Findings

The findings from the study shows that ICT has a low inverse effect on the level of tax revenue in Nigeria. This is represented by an adjusted R-square of -0.29 in table 2. The result further shows that ICT does not have a significant effect on tax revenue generation in Nigeria. This means that the higher the level of ICT development or the digitization of the economy, the lower the tax revenue realized though, not at a significant level. This finding contradicts the position of McCuskey, *et al.* (2018), who pines that ICT improves tax revenue among African countries. The possible reason for the variation in result might be due to differences in methodology. While this study used the ex-post facto research design and made use of the case study research method in which data was gathered from the case study entities based on the biases of the authors hence, might not be objective.

In addition, the result as show that ICT has a low positive effect on the level of tax evasion in Nigeria. This is indicates by an adjusted R square of 38.1% in Table 5. The result further indicates that the effect of ICT on tax evasion is not significant. This is as shown by the computed p-value of 0.061 on Table 6. This means that the more the advancement in the use of ICT in Nigeria, the higher the taxes that are being lost or evaded. This finding is in tandem with the position of Schaefer and Spengel (2012), who pined that ICT enables tax revenue to be lost from the host country where such incomes are raised to the parent company's country or totally hidden through the use of the have's countries. Finally, based on the theoretical lens of the reasoned approach theory, it appears that revenue authorities in Nigeria do not have high motivation to fully go digital in their processes and also regulate the digital space as the result of the findings show that the level of the digitalization of the economy is still insignificant on tax revenue and evasion in Nigeria.

Conclusion

The study set to examine the effect of a digitalized economy on tax administration in Nigeria over a period of twelve years spanning from 2010 to 2021. It was revealed from the study that there is an inverse effect on the development of ICT in the economy and the tax revenue which is not significant. It as reveals that ICT has a positive significant effect on the level of tax evasion in Nigeria which is not significant. Hence, the conclusion from the study is that digitalization of the economy does not have a significant effect on tax administration in Nigeria.

Recommendations

From the study and based on the findings, it is recommended that:

1. Tax authorities at all levels should invest more in ICT and embrace ICT in the collection of taxes as it will improve the tax revenue drive in Nigeria. This should be done by ensuring that filing of tax forms to obtain tax clearance certificates is automated to reduce human interference.
2. In addition, members of staff of revenue authorities across all levels of government in Nigeria who are concerned with the collection of taxes and performing other important roles should be adequately trained in order to harness the potential benefits presented by the ICT usage in tax administration process.

3. Furthermore, as the economy embraces innovations and becomes more digitalized, there is urgent need for the government at all levels to put in tax laws to block loopholes and regulate the collection of taxes in an ICT (digitalized) economy. Therefore, the tax authorities at all levels should work hand-in-hand with the legislative bodies at their various levels of government to provide technical assistance in the drafting of strict laws that will curb tax evasion activities in a digitalized economy.

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