Tax Digitalisation and Revenue Tax Compliance: The Empirical Approach

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A b s t r a c t

This paper investigated the effect of tax digitalisation dimensions on revenue tax compliance of Federal Inland Revenue Service (FIRS), Abuja, Nigeria. A cross-sectional survey research design was implemented in retrieving data from 603 employees of the Federal Inland Revenue Service in Abuja, Nigeria. The simple random sampling technique was applied. Also, reliability and validated tests were conducted on the adapted questionnaire before using it for the study. The multiple regression analysis results revealed that tax digitalisation dimensions had a positive and significant effect on revenue tax compliance [(Adj. R^2 = 0.733, (F (4, 598) = 415.220, p<0.05)] with electronic reporting as the best predictor on revenue tax compliance. Management of FIRS should encourage submitting tax returns online, accept payment online, and ensure electronic reporting sharing of up-to-date information to improve revenue tax compliance.

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Background to the Study

Globally, the significance of revenue generation becomes evident when the statistics associated with non-compliance is considered. For instance, the International Monetary Fund (IMF, 2021), reported that the annual cost of non-compliance with individual income taxes is estimated to be approximately $319 billion in the United States of America (USA) (Internal Revenue Service, 2016). Also, in the USA, the tax gap report published in 2016 revealed that the tax gap (which accounts for late payments made either voluntarily or as a result of enforcement action) averaged $406 billion per year from 2008-2010, showing that about 16 percent of taxes went unpaid (Gale & Krupkin, 2019). This was equivalent to 2.8 percent of annual gross domestic product (GDP) and 18 percent of annual federal revenues during that period. If the tax gap stayed constant relative to GDP since then, it would have reached $560 billion by 2018. For perspective, the federal budget deficit in 2018 was $779 billion, so the tax gap could plausibly have been 70-80 percent as large as the entire budget deficit in 2018 (Gale & Krupkin, 2019). Moreover, according to the Burean of Labor Statistics (2022), an estimated 72.5 million individuals avoided payment of federal income taxes for tax year 2022 depicting a substantial decline from the 59.3% who paid no federal income taxes in 2020 and from the 56% in 2021. In Nigeria, several reports have shown that revenue tax compliance in organisations over the years have been relatively low (FIRS, 2020; KPMG, 2021; Revenue Statistics in Africa, 2021). According to the Heritage Foundation (2018), the ratio of tax revenue to GDP in Nigeria is only 6.1%. In addition, Nigeria's tax-to-GDP ratio in 2019 (6.0%) was lower than the average of the 30 African countries in Revenue Statistics in Africa 2021 (16.6%) by 10.7 percentage points. This figure has remained in the lower regions (Revenue Statistics in Africa, 2021; World Bank, 2022). Interestingly, businesses depend on remittance from individuals, but compliance is also low.

According to the Nigerian Bureau of Statistics (NBS, 2019) Nigeria's population of employed persons at 69.5 million people as of September 2018. However, the individual tax-paying population is estimated as 19 million, indicating that about 50.5 million employed Nigerians operate outside the tax net. In 2018, the 36 states of the federation and the Federal Capital Territory (FCT) generated total tax revenue of 669 billion naira, resulting in an average of 35,211 naira per registered taxpayer and a paltry 6,021 naira per economically active person. Evidently, the level of revenue tax compliance is dismal, and this accounts for the low ratio of tax revenue to the country's gross domestic product (NBS, 2019). These figures have continued to drop even in 2020 and 2021 (NBS, 2022). Data regarding non-compliance is supported by scholars (Adedayo, 2021; Alabede et al., 2011; Kupoluyi et al., 2022) position that a major problem faced by all tax authorities is that it has never been easy to persuade all taxpayers to comply with the regulations of a tax system regardless of time, place, or industry-type. The level of non-compliance could have been made worse as evidence indicate electronic fiscal devices (EFDs) deployed to improve value-added tax (VAT) collection and compliance in some African countries has encountered substantial challenges such as significant levels of non-compliance among VAT-payers and potential VAT-payers, inability of Government to employ ICT in identifying VAT-payers and potential VAT-payers (Eilu, 2018), and poor database and

tax touting are some of the issues impeding compliance by individuals and corporate entities (Chartered Institute of Taxation of Nigeria (CITN), 2021).

Tax digitalisation, according to KPMG (2023), has remained an enormous debate since it means different things to many people. Nevertheless, from any angle, digitization has been changing all aspects of taxation for some time; from revenue tax collection and compliance down to the tax base itself. The European Union (EU) (2021) had adopted new rules (7th version or the 6th amendment) to the European Council Directive on Administrative Cooperation and Automatic Exchange of Information in the Field of Taxation (DAC7) under which, from 2023 onwards, member states' tax authorities will automatically exchange information on income earned by sellers on digital platforms. More so, a report by Binder (UK), Dijker (Netherlands) and Otte (Germany) (BDO Global) (2023), claimed that in 2021, 137 out of the 141 countries in the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (IF) reached a landmark agreement on a two-pillar solution to reform the international tax framework in response to the challenges relating to taxation of the digital economy; although, not all countries have reached agreement on the implementation of digital taxation (KPMG, 2023).

In light of these discussions, extant studies have examined the effect of tax digitalisation, revenue tax compliance, and tax revenue (Eilu, 2018; Felix, & Cyrus, 2020; Klaus & Holger, 2019; Shagari et al., 2017; Zayol & Gberindyer, 2018). Felix and Cyrus (2020) empirically examined electronic cargo tracking system and its effects on revenue realization; Zayol and Gberindyer (2018), worked on information communication technology (ICT) on tax and revenue collection. Eilu (2018) on adoption of electronic fiscal devices (EFDs) for Value-Added Tax (VAT) collection. While Klaus and Holger (2019) studied innovation, automation, and inequality in the race against the machine. These studies found a link between the predictor variables and outcome variables. However, majority of these works were conducted in developed countries while some were qualitative studies. Also, scholarly review revealed a dearth in academic literature as regards the influence of tax digitalisation on compliance as identified by Tijani and Ilugbemi (2015), Suparna and Aghnia (2020), Olurankinse and Oladeji (2018). The researchers' recommended for these identified gaps to be filled and this paper will be filling these gaps within the Internal Revenue Service sector. Consequently, the need to determine the effect of tax digitalisation on revenue tax compliance of Internal Revenue Service in Abuja, Nigeria becomes necessary. The formulated hypothesis for this paper is stated as:

H_0:   Tax digitalisation dimensions have no significant effect on revenue tax compliance of Internal Revenue Service in Abuja, Nigeria.

Literature Review
Revenue Tax Compliance
It is imperative to understand compliance before conceptualizing revenue tax compliance hence, while on the one hand, Sadress and Juma (2020) defined compliance as

the individual or business decision to comply with the laws in a given country; Suparna and Aghnia (2020) referred to compliance as generally associated with people's readiness to behave according to the regulations and administration without having to wait for law enforcement activities. On the other hand, John-Akamelu and Iyidiobi (2019) defined revenue tax compliance as an accurate and timely reporting of tax obligations in line with the tax laws in effect when tax returns are filed. The definition suggests that a person must disclose the correct amount of income, deduct the correct amount from the allowable expenses, and then pay the correct amount of tax by the deadline to comply with the law (Smith, 2018). Mukuwa and Phiri (2020) added that tax compliance connotes paying taxes on time and timely reporting of correct tax information; hence tax compliance means seeking to pay the right amount of tax in the right place at the right time.

Further, tax compliance represents the degree to which a taxpayer complies with the prevailing tax rules and regulations (Hayat et al., 2022; Youde & Lim, 2019). Taxpayers' compliance with the tax rules and procedures is vital for the progress of a nation and the government's effort to provide social support to the poor of the country (Musimenta, 2020). Ghani et al. (2020) stressed that more so, the tax revenue system helps generate financial resources to develop the economic conditions and redistribute the resources from the rich to the poor. Other scholars (Yu, 2023; Umar et al., 2019) claimed that tax compliance is a long-standing goal for the government to raise tax revenues, which is also an important factor in determining the government's capacity. As such, tax compliance is a deterrence based on tax awareness, tax penalties, tax audits, and tax rates hence, paying tax liabilities based on deterrence outperforms avoiding tax audits, penalties, or compliance due to fear (Noor Azmi et al., 2020; Oladele, 2021).

Tax Digitalisation
Tax digitalization or digitization of tax is an enormous concept that means different things to many people; but from any angle, digitization has been changing all aspects of taxation for some time (KPMG, 2023). Ajala and Adegbie (2020) referred to tax digitalization as a process through which governments use information communication and technologies to obtain more accurate and timely information on taxpayer operations. Harrison and Nahashon (2015) inferred that tax digitalisation is a process where tax documents or tax returns are submitted through the internet, usually without the need to submit any paper return; it encompasses the use of internet technology.

Tax digitalisation has become necessary for the proper creation and dissemination of information between taxpayers and the government (Irefe-Esema & Akinmade, 2020). The main goal of these digitalisation policies is to improve tax revenue collection by taking advantage of the increasing rate of ICT penetration in the region (Zayol & Gberindyer, 2018). As a result, the implementation of tax digitalisation is advantageous to the efficiency and effectiveness of revenue tax collection system (Awai & Oboh, 2020). In contrast, digitization of tax administration is a difficult task that requires radical changes in the way it is organized and delivered to its intended users (Okundaye et al., 2019). Digital technology is a powerful tool of management, but tax administration's encounter

with this mode of work has often proved to be complex, sometimes unsuccessful (Adeyeye, 2019). The problem is that tax administration, like any other sector, often wants to create its own electronic management and information system, and a lot of money, effort and technology is spent (Karxhner & Somare, 2017). Thus, this paper investigated tax digitalisation through the lenses of electronic audit, electronic tax filing, online payment system and electronic reporting as discussed briefly.

Electronic Audit
Electronic audit (E-Audit) is a technology based autonomous assessment of records, tax returns, tax installments and different records of a taxpayer to affirm compliance with tax laws, rules and regulations and precision of tax paid and adhering to relevant accounting standards and norms. Similarly, Damerji (2020) indicated that electronic audit can be regarded as a technological process or system of examination of an individual or organisation's tax report by the relevant tax authorities in order to ascertain compliance with applicable tax laws and regulations of state. This is aided by some form of computer software that allows for an easy process delineated of human computations. Schultz and Tropmann-Frick (2020) aligned further that tax audit that are programmed in a computer software tries to confirm the numbers that have been put on an individual or organisation's tax return.

Electronic Tax Filing
Electronic tax filing is the process of submitting tax returns and related documents to tax authorities using electronic means, typically over the Internet (Cornelli et al., 2020). Electronic tax filing allows taxpayers to digitally complete and transmit their tax forms, calculations, and supporting documentation for the purpose of compliance with tax regulations and the assessment of tax liability (Ammirato et al. 2020). Electronic tax filing (ETF) is the process of filing tax returns electronically, through the internet or other electronic means, rather than on paper (Apeti & Edoh 2023). ETF is becoming increasingly popular because it is more convenient, efficient, and accurate than traditional paper filing (Bokhari & Myeong 2022). Electronic filing (e-filing) is the process of submitting your individual income tax return to the IRS using electronic means (Chun-Liang et al. 2021).

Online Payment System
An online payment system is a software application that allows merchants to accept payments from customers over the internet (Adeyemi & Adeduro 2020). It is also a computerized system that allows users to make and receive payments online (Peek, 2020). Additionally, an online payment system allows users to make payments over the internet (Cornelli et al., 2020). William et al. (2019) and Adegboyo et al. (2021) opined that it is a method of payment that allows users to make payments over the internet. More so, online payment systems typically use a secure digital connection to transfer funds between buyers and sellers (Shahzad et al., 2021) and makes financial transactions electronically through the internet (Owolabi et al., 2020; Zayol & Gberindyer, 2018).

Electronic Reporting

Electronic reporting refers to bringing users relevant useful information in a timely way, without the users having to seek out the information for themselves (Syed et al., 2017). To Gotthardt et al. (2020), electronic reporting is the process through which reports are automatically refreshed on a regular basis. Once designed, electronic reporting brings users exactly what they need in a relevant and timely way, thus, removing the need for users to go looking for the information, or for a single reports guy (Rotich & David, 2018). Thus, Tahar et al. (2020) added that electronic reporting involves management tool used to create and share organisational reports at a specific time interval without the need to update the information each time.

Tax Digitalisation Dimensions and Revenue Tax Compliance

Previous studies have been conducted on tax digitalisation and revenue tax compliance with divergent results. Etim et al. (2020) examined the effect of the digitalisation of the economy on revenue tax compliance in Nigeria. The finding suggested that the digitalisation of the economy had a negative effect on revenue tax compliance in Nigeria due to the lack of modern technology in curbing tax evasion as well as the absence of a legal framework to checkmate non-compliance, especially the NRCs. In addition, Komolafe and Chukwuani (2020) revealed that the enactment of the Nigeria Finance Act 2020 does not only address the controversy surrounding taxing the digital economy in the nation, but a paradigm shift for a new regime. This has become necessary to address the loopholes in digital assessment through yearly amendments to the Finance Act to meet emerging challenges therefrom. Similarly, Hanindyari (2018) reported that electronic reporting had a significant effect on compliance. The finding indicated further that the impact on taxpayer awareness and quality of e-tax services are closely related to e-filing taxpayer applications and revenue tax compliance. Also, Harrison and Nahashon (2015) focused on small taxpayers and revealed that online tax system does affect revenue tax compliance level.

The study of Irefe-Esema and Akinmade (2020) revealed that automation significantly increased tax registration and payment compliance. Similarly, Awai and Oboh (2020) showed that electronic tax dimension process together with the appropriate implementation of technology as tax administration approach can result in changes in Nigeria tax-to-GDP ratio, voluntary revenue tax compliance and collection, data storage of taxpayer information, revenue generation system, and ease of paying Taxes. Further, Guillermo et al. (2013) in their study demonstrated that the use of information technology for tax administration results in reduction in administration and compliance costs. In the same vein, Sadress and Juma (2020) revealed that there is a positive significant relationship between attitude towards electronic tax system and revenue tax compliance. Further, results indicated that there is a positive significant relationship between adoption of the e-tax system and revenue tax compliance. The relationship between attitude and revenue tax compliance is partially mediated by the adoption of an e-tax system.

Additionally, Syed et al. (2017) indicated that perceived ease of use and perceived usefulness have a positive impact on user satisfaction and higher user satisfaction is linked to higher intentions of adopting online tax filing and compliance. Likewise, Tahar et al. (2020) demonstrated that perceived ease-of-use and perceived security had a positive effect on the use of e-Filing, while perceived usefulness has no effect on the use of e-Filing. In addition, readiness of information technology did not mediate the relationships among the perceived ease-of-use, perceived usefulness, and perceived security on the use of e-Filing. Further, the study of Suparna and Aghnia (2020) showed that the attitude about the electronic tax system affects the revenue tax compliance of MSMEs. Also, adoption of the electronic tax system affects the revenue tax compliance.

On the contrary, Bari et al. (2022) demonstrated that although ICT readiness reports a positive association with tax revenue, it is not statistically significant, and ICT usage is a major tax revenue mobilization enhancer. In addition, the authors stated that ICT use increases direct tax revenues through personal income tax and indirect tax revenues through VAT, and that the pass-through effect is evident through three channels: corruption control, government effectiveness, and revenue tax compliance. Also, Etim et al. (2020) suggested that revenue tax compliance is negatively influenced when economy is digitalized. The study revealed that digitalisation of economy had negative effect on revenue tax compliance in Nigeria as a result of issues surrounding its introduction and application. Similarly, Nkote and Luwugge (2019) revealed that automation was negatively and significantly related with tax clearance time.

In congruence with the findings of Bari et al. (2022), Etim et al (2020), and Nkote and Luwugge (2019), the studies of Richard and Eric (2008) showed that advances in technology clearly changed the tax environment in developing countries by changing the underlying economy. Further, the study of Irefe-Esema and Akinmade (2020) revealed that filing and reporting compliance showed no positive response as, though participants confirmed the presence of e-filling but displayed much displeasure with the platform describing it as poor, horrible, and not pleasant as it has hindered e-filing as the preferences for taxpayers. Also, Tahar et al. (2020) demonstrated that perceived usefulness has no effect on the use of e-Filing. In addition, readiness of information technology did not mediate the relationships among the perceived ease-of-use, perceived usefulness, and perceived security on the use of e-Filing.

Theoretical framework
This study will be anchored on the Technology Acceptance Model (TAM) developed by Davis (1989). Wang et al. (2023) theorized that, TAM is a significant research model of information systems and information technology acceptance for predicting persons' desire to use and accept information systems and technology. There are two factors in the Technology Acceptance Model, including perceived ease of use and perceived usefulness. Perceived usefulness is the extent to which a person believes that utilizing a specific information system or information technology would improve his or her job or life performance. Perceived ease of use is the degree to which an individual believes that

utilizing a specific information system or information technology would be effortless. Perceived ease of use and perceived usefulness have a favourable influence on attitudes about an information system, as well as on individuals' intents to use and acceptance of the system (Mishra et al., 2023).

Additionally, perceived ease of use influences perceived utility in a favourable manner, and both perceived ease of use and perceived usefulness are influenced by external variables. The following are the proposed technology acceptance model measurement items. Typically, perceived ease of use is measured using at least three items; name of information system or information technology is easy for me to use. Typically, perceived usefulness is measured with at least three items; using name of information system or information technology would increase my effectiveness for work, study, life tasks. Typically, at least three items were used to measure an individual's attitude; an example item: It is prudent to utilize name of information system or information technology. Typically, behavioural intention is measured with at least three items; aim to use name of information system or information technology as often as necessary. Consequently, the significance of electronic audit [EA] (x_1), electronic tax filing [ETF] (x_2), online payment system [OPS] (x_3), and Electronic Reporting [ER] (x_4), as dimensions of tax digitalisation [TD] (X) on revenue tax compliance [RTC] (Y) in Federal Inland Revenue Service (FIRS), Abuja, Nigeria cannot be exaggerated. This phenomenon is thus expressed mathematically as: $RTC = \beta o + \beta_1 EA_i + \beta_2 ETF_i + \beta_3 OPS_i + \beta_4 ER_i + \mu i$

Research Methodology
The study applied the cross-sectional survey research design to broaden the understanding of a specific population at a particular time and determine behavioral patterns (Zikmund et al., 2012). The selection of the survey design is consistent with the works of Akyuz et al. (2019) on impact of bank verification number on corrupt business practices in United Bank for Africa in Abuja. Also, Apriyantopo and Aprianingsih (2020) worked on information communication and technology (ICT) adoption in Asian countries: An empirical evidence of economic and socio-cultural factors. Likewise, Odukwu et al. (2023) studied tax compliance and economic growth of Nigeria: The moderating effect of tax morale. While, Sadress and Juma (2020) worked on, the mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and revenue tax compliance. The study population was 10,342 employees of the Federal Inland Revenue Service (FIRS) in Abuja, Nigeria Abuja has been selected because it is the headquarters of the Federal Inland Revenue Services where innovations are decided, approved, and authorised. Abuja is also the Federal Capital Territory of Nigeria. The paper applied the Cochran's sample size formula (1977) at 95 percent confidence level and 5percent margin error. Consequently, a sample size of seven hundred and thirty-seven (737) which included an additional 30% sample size to reduce the number of either unreturned data or missing data (Zikmund et al., 2015), constituted the sample size.

The paper adopted the simple random sampling technique, while a well-structured questionnaire was used as the research instrument with items adapted. The questionnaire was administered in person. A pilot test was conducted on the questionnaire along with validity and reliability test to confirm the instrument could measure what it was projected to measure in the paper taking into reflection how well the concept was defined by the measure(s). A result of 0.7 and higher was achieved in the pilot test. Likewise, based on the result of the outcome from the pilot study, the factor analysis was applied to eliminate question items that either reduced the suitability of the data (Kaiser-Meyer-Olkin [KMO]) and or strength of the association among the variables (Bartlett test). Also, the content, criterion, and construct validity were established to verify the validity of the instrument. The validated reliability result through Cronbach's alpha coefficients from the internal consistency test showed; Revenue Tax Compliance (α) = 0.898 and Tax Digitalisation Dimensions ranged 0.802 - 0.907. Primary data sourced from the sampled Federal Inland Revenue Service (FIRS) were used in this paper while the multiple regression analysis was applied to study the effect through Statistical Package for Service Solutions SPSS 27.0. Accordingly, the multiple regression equation was established based on the dimensions of tax digitalisation. Therefore, the model was formulated regarding the research objective:

$Y = f(X)^n$ that is:
$Y = f(x_1, x_2, x_3)$
$Y = \alpha_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \mu_i$……………………………………………………….. eq. 1

Where: Y = Revenue Tax Compliance (RTC)
      X = Tax Digitalisation Dimensions (TDD)

Where:
      x_1 = Electronic Audit (EA)
      x_2 = Electronic Tax Filing (ETF)
      x_3 = Online Payment System (OPS)
      x_4 = Electronic Reporting (ER)

The functional relationship of the model is presented as:

$\sum(EA + ETF + OPS + ER) = TDD$

Hence: $TDD = a_0 + \beta_1 EA_i + \beta_2 ETF_i + \beta_3 OPS_i + \beta_4 ER_i + \mu_i$ …………………………………………….equ. 2

Where:
β_0 = Constant term
β_1 = Coefficient of electronic audit
β_2 = Coefficient of electronic tax filing
β_3 = Coefficient of online payment system

β_4 = Coefficient of electronic reporting
μ = Error term (Stochastic variable).

Using the multiple regression statistical analysis, the hypothesis was tested at a 95% confidence interval. The study expects that a positive and significant effect will be observed from tax digitalisation dimensions on revenue tax compliance. The study adhered strictly to ethics of research regarding anonymity, respect for human dignity, confidentiality, and non-falsification of data, non-data manipulation was applied in the data collection and collation process. Similarly, materials gotten from the studies of other scholars were duly acknowledged.

Results

To investigate whether tax digitalisation dimensions have no significant effect on revenue tax compliance of Federal Inland Revenue Service (FIRS), Abuja, Nigeria, the researchers applied multiple regression analysis. The independent variable used in the study was tax digitalisation dimensions, while the dependent variable was revenue tax compliance. The results of the analysis and parameter estimates obtained were presented in Table 1.

Table 1: Summary of Multiple Regression Analysis for effect of tax digitalisation dimensions on revenue tax compliance of Federal Inland Revenue Service, Abuja, Nigeria

N	Model	B	T	Sig.	ANOVA (Sig.)	R	Adjusted R^2	F (4, 598)
	(Constant)	4.129	8.272	0.000				
	Electronic Audit	0.069	2.137	0.033				
	Electronic Tax Filing	0.193	5.713	0.000				
603	Online Payment System	0.273	7.293	0.000	0.001[b]	0.857[a]	0.733	415.220
	Electronic Reporting	0.288	7.998	0.000				

a. Dependent Variable: Revenue Tax Compliance
b. Predictors: (Constant), Electronic Reporting, Electronic Audit, Electronic Tax Filing, Online Payment System

Source: Researcher's Field Survey, 2024
See appendix 1 for the multiple regression analysis output

Interpretation

Table 1 showed the multiple regression analysis results for the effect of tax digitalisation on revenue tax compliance of FIRs, Abuja, Nigeria. The results showed that electronic audit (β = 0.069, t = 2.137, $p<0.05$), electronic tax filing (β = 0.193, t = 5.713, $p<0.05$), online payment system (β = 0.273, t = 7.293, $p<0.05$) and electronic reporting (β = 0.288, t = 7.998,

p<0.05) all have positive and significant effects on revenue tax compliance of FIRs in Abuja Nigeria. The results of the analysis revealed that all dimensions of tax digitalisation (electronic reporting, electronic audit, electronic tax filing and online payment system) have significant effect on revenue tax compliance of FIRs in Abuja Nigeria. This implies that, electronic reporting, electronic audit, electronic tax filing, and online payment system are important predictors of revenue tax compliance of Federal Inland Revenue Service in Abuja Nigeria. It also revealed that out of the dimensions, electronic reporting was the best predictor on revenue tax compliance.

The correlation *R* value of 0.857[a] supports this result and it indicated that tax digitalisation has a strong and positive effect on the revenue tax compliance of FIRs in Abuja Nigeria. The coefficient of multiple determination *Adj. R^2* = 0.733 indicates that 73.3% variance in revenue tax compliance of FIRs in Abuja Nigeria can be accounted for by the proxies of tax digitalisation while the remaining 26.7% changes that occurs is accounted for by other variables not captured in the model. The predictive and prescriptive multiple regression models are thus expressed:

RTCO= 4.129 + 0.069EA+0.193ETF+0.273OPS+0.188ER + U_i------Eqn i (Predictive Model)
RTCO= 4.129 +0.069EA+0.193ETF+0.273OPS+0.188ER + U_i ---Eqn i (Prescriptive Model)

Where:
RTCO = Revenue Tax Compliance
EA   = Electronic Audit
ETF = Electronic Tax Filling
OPS = Online Payment system
ER   = Electronic Reporting

The regression model indicated that if tax digitalization dimensions were held constant at zero, revenue tax compliance of FIRs in Abuja Nigeria would be 4.129 indicating a positive trend. From the predictive model, all the four dimensions of the tax digitalisation (electronic audit, electronic tax filing, online payment system and electronic reporting) have significant effect on the revenue tax compliance of the FIRs in Abuja Nigeria and contributed significantly to the prediction. From the prescriptive model, it is observed that statistically when tax digitalisation, particularly online payment system, electronic reporting and electronic tax filing dimensions of tax digitalisation are improved by one unit, revenue tax compliance would also increase by 0.069, 0.139, 0.273, and 0.188 units respectively. The results suggested that tax digitalisation, electronic audit, online payment system, electronic reporting and electronic tax filing play a significant role in determining revenue tax compliance. Therefore, FIRs should prioritize implementing electronic audit, online payment system, electronic reporting, and electronic tax filing of their tax system to enhance their revenue tax compliance.

Further, the *F*-statistics (*df* = 4, 598) = 415.220 at *p*<0.05) indicated that the overall model is statistically significant for predicting the effect of tax digitalisation on revenue tax compliance. This implies that the regression model is a good fit for forecasting the effect of tax digitalisation (FIRS) on revenue tax compliance of (FIRS) in Abuja Nigeria. This means that the variables included in the model (electronic audit, electronic tax filing, online payment system, and electronic reporting) are all significant in explaining the variability in revenue tax compliance with electronic reporting as the best predictor on revenue tax compliance. Therefore, the model can be used to make accurate predictions about the effect of changes in these variables on revenue tax compliance. This information could be useful for decision-makers in the Tax regulatory board, as it provides insights on which tax digitalisation to prioritize to enhance their revenue tax compliance. Therefore, the null hypothesis one (H$_0$) which states that Tax digitalisation dimensions have no significant effect on revenue tax compliance is rejected.

Discussion of Findings
The overall result of the hypothesis showed that tax digitalisation dimensions have a positive and significant effect on revenue tax compliance of Federal Inland Revenue Service (FIRS) in Abuja Nigeria. Moreover, all tax digitalisation dimensions (electronic audit, electronic tax filing, online payment system, and electronic reporting) were positive and significant on revenue tax compliance with electronic reporting as the best individual predictor on revenue tax compliance. This study results supports the conceptual position of KPMG (2023) that the digitization of tax has remained an enormous debate since it means different things to many people. Nevertheless, from any angle, digitization has been changing all aspects of taxation for some time; from revenue tax collection and compliance down to the tax base itself. According to Ajala and Adegbie (2020) and Bassongui and Houngbédji (2023) tax digitalization enables governments to use information communication and technologies to obtain more accurate and timely information on taxpayer operations.

In addition, this new tool of tax systems e-governance improves service delivery by reducing the time and cost of tax declarations to citizens and compliance (Bassongui & Houngbédji, 2023). Also, Hanrahan (2021) opined that while on the one hand, tax digitization is broadly acknowledged that it could also have a positive link with tax revenues through direct and indirect channels. On the other hand, digitalization improves the performance of tax authorities through better software, online tax return filing, and better record keeping, improving both compliance on the part of taxpayers and more efficient tax collection (IMF 2018). This role can indirectly improve revenue-raising capabilities of government as digitalization is associated with economic growth, productivity, inward foreign direct investment, and international trade (Csonto et al., 2019; Hadzhieva, 2019; Hanrahan, 2021). Okafor (2023) stressed that the expansion of the digital economy in most African countries has raised concerns on the ability and preparedness of tax regimes in these countries to address the new and fundamental phenomenon. The movement from the conventional bricks and mortar commercial setting to an economy that is electronically and informational driven presents substantial

and daunting challenges for governments and their tax authorities (Bunn et al., 2020; Kelbesa, 2020; Mpofu & Tankiso, 2022; Rukundo, 2020). Nevertheless, in line with this study's results Awai and Oboh (2020) claimed that the implementation of tax digitalisation is advantageous to the efficiency and effectiveness of revenue tax collection system and compliance.

Empirically, the result from this study corroborates the work of Etim et al. (2020) who found that there is a significant effect of the digitalisation of the economy on revenue tax compliance in Nigeria. Although, in the work of Etim et al. (2020) the digitalisation of the economy had a negative effect on revenue tax compliance in Nigeria due to the lack of modern technology in curbing tax evasion as well as the absence of a legal framework to checkmate non-compliance. In addition, Komolafe and Chukwuani (2020) revealed that the enactment of the Nigeria Finance Act 2020 does not only address the controversy surrounding taxing the digital economy in the nation, but a paradigm shift for a new regime. This has become necessary to address the loopholes in digital assessment through yearly amendments to the Finance Act to meet emerging challenges therefrom. Similarly, Hanindyari (2018) reported that electronic reporting had a significant effect on compliance. Also, Harrison and Nahashon (2015) focused on small taxpayers and revealed that online tax system does affect revenue tax compliance level.

Moreover, the study of Irefe-Esema and Akinmade (2020) revealed that automation significantly increased tax registration and payment compliance. Likewise, Awai and Oboh (2020) found that electronic tax dimension process together with the appropriate implementation of technology as tax administration approach can result in changes in Nigeria tax-to-GDP ratio, voluntary revenue tax compliance and collection, data storage of taxpayer information, revenue generation system, and ease of paying Taxes. In the same vein, Sadress and Juma (2020) found that there is a positive significant relationship between attitude towards electronic tax system and revenue tax compliance. Further, results indicated that there is a positive significant relationship between adoption of the e-tax system and revenue tax compliance. Likewise, Tahar et al. (2020) demonstrated that perceived ease-of-use and perceived security had a positive effect on the use of e-Filing, while perceived usefulness has no effect on the use of e-Filing. Further, the study of Suparna and Aghnia (2020) also found that the attitude about the electronic tax system affects the revenue tax compliance. Also, adoption of the electronic tax system affects the revenue tax compliance.

On the contrary, Bari et al. (2022) demonstrated that although ICT readiness reports a positive association with tax revenue, it is not statistically significant, and ICT usage is a major tax revenue mobilization enhancer. In addition, the authors stated that ICT use increases direct tax revenues through personal income tax and indirect tax revenues through VAT, and that the pass-through effect is evident through three channels: corruption control, government effectiveness, and revenue tax compliance. Similarly, Nkote and Luwugge (2019) found that automation was negatively and significantly related with tax clearance time. In congruence with the findings of Bari et al. (2022) and

Nkote and Luwugge (2019), an earlier study by Richard and Eric (2008) revealed that advances in technology clearly changed the tax environment in developing countries by changing the underlying economy.

Further, the study of Irefe-Esema and Akinmade (2020) revealed that filing and reporting compliance showed no positive response as, though participants confirmed the presence of e-filling but displayed much displeasure with the platform describing it as poor, horrible, and not pleasant as it has hindered e-filing as the preferences for taxpayers. Also, Tahar et al. (2020) demonstrated that perceived usefulness has no effect on the use of e-Filing. In addition, readiness of information technology did not mediate the relationships among the perceived ease-of-use, perceived usefulness, and perceived security on the use of e-Filing. Interestingly, the divergent results in previous works as against this present study could be related to industry-specifics, geographical location, scope, and methodology applied. Thus, studies on tax digitalisation and compliance have shown diverse results (Etim et al., 2020; Nkote & Luwugge, 2019; Suparna & Aghnia, 2020; Syed et al., 2017; Tahar et al., 2020).

Interesting the fact that this study results found electronic reporting as the best individual predictor on revenue tax compliance supports the position of Gotthardt et al. (2020) that electronic reporting automatically refreshes on a regular basis, brings users exactly what they need in a relevant and timely way (Rotich & David, 2018), and create and share organisational reports at a specific time interval without the need to update the information each time (Tahar et al., 2020). As such, electronic reporting tells the user what has happened and how different areas of a business are performing (Adegbite et al., 2019) and saves a considerable amount of time for the user as against the manual data wrangling processes (McCluskey & Huang, 2018). However, on the contrary, automation technologies/electronic reporting raise productivity but disrupt labor markets, displacing workers and lowering their earnings (Acemoglu & Restrepo, 2022; Humlum, 2019).

Theoretically, the results support the Technology Acceptance Model (TAM) by Davis (1989). Wang et al. (2023) theorized that, TAM is a significant research model of information systems and information technology acceptance for predicting persons' desire to use and accept information systems and technology. In support of this theory, Nawawi and Salin (2018) indicated that voluntary revenue tax compliance will be achieved if Taxpayers possess positive behavior to the tax refund reporting and payment of tax payable. The behavior of Taxpayer to self-assessment should be promoted to achieve the improved level of revenue tax compliance (Nawawi & Salin, 2018). According to Khaddafi et al. (2018), the implementation of electronic tax system will rely on the perception of ease of use of system tax, intensity behavior and user satisfaction. This implies that Taxpayers should be pleased and motivated to use electronic tax system, however the tax system must also be easy to use.

In summary, the researchers findings strengthens the positions of previous scholars (Khaddafi et al., 2018; Nawawi & Salin, 2018; Syed et al., 2017; Wang et al., 2023) and the Technology Acceptance Model (TAM) by Davis (1989) that though digitalisation of taxes could affect compliance rates but perceived ease of use and perceived usefulness of digitalisation systems have a positive impact on user satisfaction as, higher user satisfaction is linked to higher intentions of adopting online tax filing and compliance. Consequently, on the premise of the overall multiple regression results, the the null hypothesis (H_0) which states that tax digitalisation dimensions have no significant effect on revenue tax compliance of FIRS in Abuja Nigeria is rejected.

Conclusion

From the empirical findings of this study, the researcher concluded that that tax digitalisation dimensions (electronic audit, electronic tax filing, online payment systems, and electronic reporting) had positive and significant effect on revenue tax compliance in Federal Inland Revenue Service (FIRS), Abuja, Nigeria. This study recommends that management of First Inland Revenue Service (FIRS) should encourage submitting tax returns online, accept payment online, and electronic reporting sharing of up-to-date information to improve revenue tax compliance. More electronic reporting could enhance revenue tax compliance. As such to improve tax compliance there is the need to ensure that there is synergy between perceived ease of use and usefulness of the digitalisation system by taxpayers.

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References

Acemoglu, D., & Restrepo, P. (2022). Tasks, automation, and the rise in U.S. wage inequality, *Econometrica, Econometric Society, 90*(5), 1973-2016. https://doi.org/10.3982/ECTA19815

Adedayo, M. S. (2021). *Good governance, bad governance: The politics of coronavirus pandemic in Nigeria,* RAIS Conference Proceedings 2021 0028, Research Association for Interdisciplinary Studies.

Adegbie, F. F., Akintoye, I. F., & Olusanjo, O. R. (2019). Effect of integrated reporting practices on corporate disclosure and transparency in Nigeria quoted manufacturing companies, *International Journal of Economics & Business Review, 7*(6), 72-80.

Adegboyo, O., Sunday, K., & Fasina, O. (2021). The impact of government policies on Nigeria economic growth (case of fiscal, monetary and trade policies), *Future Business Journal, 7*(1), 1-14. https://doi.org/10.1186/s43093-021-00104-6

Adeyemi, A., & Adeduro, A. (2020). *INSIGHT : Tax revenue mobilization in Nigeria, Daily tax report.* Retrieved from: https://news.bloombergtax.com/daily-tax-report-international/insight-tax-revenue-mobilization-in-nigeria

Adeyeye, B. (2019). Improving tax administration through technology innovation in Nigeria (A study of Federal Inland Revenue Service), *Annals of Spiru Haret University. Economic Series. 1*(1), 31-64. http://dx.doi.org/10.26458/1913

Ajala, M. O. O., & Adegbie, F. F. (2020). Effects of information technology on effective tax assessment in Nigeria, *Journal of Accounting and Taxation, 12*(4), 126-134. http://dx.doi.org/10.5897/JAT2020.0416

Akyuz, M., Tony, L. W., & Opusunju, M. I. (2019). Impact of bank verification number on corrupt business practices in United Bank for Africa in Abuja, *International Journal of Management Studies and Social Science Research, 1*(6), 39-52.

Alabede, J. O., Ariffin, Z. Z., & Idris, K. M. (2011). Individual taxpayers' attitude and compliance behaviour in Nigeria: The moderating role of financial condition and risk preference, *Journal of Accounting and Taxation, 3*(5), 91-104.

Ammirato, S., Linzalone, R., & Felicetti, A. (2020). Knowledge power in pandemics. A critical literature review, *Knowledge power Research & Practice, 19*(3), 1-12. http://dx.doi.org/10.1080/14778238.2020.1801364

Apeti, A. E., & Edoh, E. D. (2023). Tax revenue and mobile money in developing countries. *Journal of Development Economics, 161,* 103014. https://doi.org/10.1016/j.jdeveco.2022.103014

Apriyantopo, W., & Aprianingsih, A. (2020). Information communication and technology (ICT) adoption in Asian countries: An empirical evidence of economic and socio-cultural factors. *Binus Business Review, 11*(3), 175-186. https://doi.org/10.21512/bbr.v11i3.6299

Awai, E. S., & Oboh, T. (2020). Ease of paying taxes: The electronic tax system in Nigeria, *Accounting and Taxation Review, 4*(1), 63-73.

Bari, E. K., Towfiqul, I. U., & Mohammad, S. (2022). *The value-added tax (VAT) improvement program. Raising the operational efficacy of the VAT administration in Bangladesh.* Oxfam SUPRO (Sushasoner Jonny Procharavizan/Campaign for Good Governance)

Bassongui, N., & Houngbédji, H. (2023). Impacts of tax digitalisation on tax revenues in Sub-Saharan Africa: A systematic review, *Research Square*, 1-10. https://doi.org/10.21203/rs.3.rs-2429085/v1

Bokhari, S. A. A., & Myeong, S. (2022). Use of artificial intelligence in smart cities for smart decision-making: A social innovation perspective, *Sustainability, 14*(620), 1-17. https://doi.org/10.3390/su14020620

Bunn, D., Elke, A., & Enache, C. (2020). *Digital taxation around the world. Washingtion, DC: tax foundation,* Available online: https://files.taxfoundation.org/20200527192056/Digital-Taxation-Around-the-World.pdf (accessed on 16 March 2022).

Chartered Institute of Taxation of Nigeria (CITN), (2021). *Database and tax touting.* Retrieved from: https://portal.citn.org/2021/

Chun-Liang, C., Yao-Chin, L., Wei-Hung, C., Cheng-Fu, C., & Henry, P. (2021). Role of government to enhance digital transformation in small service business. *Sustainability, 13*(3), 1-24. https://doi.org/10.3390/su13031028

Cornelli, G., Frost, J., Gambacorta, L., Rau, P. R., Wardrop, R., & Ziegler, T. (2020). *Online payment system and big tech credit: A new database.* BIS Working Paper No. 887

Csonto, B., Huang, Y., & Tovar, C. E. (2019). *Is digitalization driving domestic inflation?* IMF Working Paper WP/19/271. Washington DC: International Monetary Fund

Damerji, H., & Salimi, A. (2020). Mediating effect of user perceptions on technology readiness and adoption of artificial intelligence in accounting, *Accounting Education, 30*(3), 107-130. http://dx.doi.org/10.1080/09639284.2021.1872035

Davis, F. D., Bagozzi, R P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models, Management Science, 35(8), 982-1003. https://doi.org/10.1287/mnsc.35.8.982

Eilu, E. (2018). Adoption of electronic fiscal devices (EFDs) for value-added tax (VAT) collection in Kenya and Tanzania: A systematic review, *The African Journal of Information and Communication (AJIC), 22*(22), 111-134. http://dx.doi.org/10.23962/10539/26169

Etim, R. S., Jeremiah, M. S., & Dan, P. B. S. (2020).revenue tax compliance and digitalisation of Nigerian economy: The empirical review, *American International Journal of Social Science, 9*(2), 42-50. http://dx.doi.org/10.30845/aijss.v9n2p5

European Union (EU) (2021). *Digital taxation.* Retrieved from: https://www.consilium.europa.eu/en/policies/digital-taxation/

Federal Inland Revenue Service (FIRS) (2022). *FIRS received N10.1trn record highest remittance in 2022.* Retrieved from: https://businessday.ng/news/article/firs-received-n10-1trn-record-highest-remittance-in-2022/

Felix, K., & Cyrus, K. (2020). Electronic cargo tracking system and its effects on revenue realization in East Africa member countries. *International Journal of Scientific and Research Publications (IJSRP), 10*(1), 633-639. http://dx.doi.org/10.29322/IJSRP.10.01.2020.p9796

Gale, G. W., & Krupkin, A. (2019). *The big budget deal is no big deal.* The Brookings Institution. https://www.brookings.edu/articles/the-big-budget-deal-is-no-big-deal/

Ghani, H. H. A., Hamid, N. A., Sanusi, S., & Shamsuddin, R. (2020). The effect of tax knowledge, compliance costs, complexity and morale towards tax compliance among self-employed in Malaysia. *Global Business and Management Research: An International Journal, 12*(1), 18–32

Gotthardt, M., Koivulaakso, D., Paksoy, O., Saramo, C., Martikainen, M., & Lehner, O. (2020). Current state and challenges in the implementation of smart robotic process automation in accounting and auditing. *ACRN Journal of Finance and Risk Perspectives, 9*(1), 90-102. http://dx.doi.org/10.35944/jofrp.2020.9.1.007

Guillermo, J., Niall, M. S., & Anton, K. (2013). *Information Technology for Tax Administration. USAID's leadership in public financial management.* Retrieved from: https://pdf.usaid.gov/pdf_docs/PNAEA485.pdf

Hadzhieva, E. (2019). *Impact of digitalisation on international tax matters – Challenges and remedies. Study commissioned by the Committee on Financial Crimes, Tax Evasion and Tax Avoidance of the European Parliament.* Luxembourg: European Union

Hanrahan, D. (2021). Digitalization as a determinant of tax revenues in OECD countries: A static and dynamic panel data analysis. *In: Athens journal of business & economics* 7(4), 321 - 348. http://dx.doi.org/10.30958/ajbe.7-4-2.

Harrison, M. M., & Nahashon, K. (2015). Effects of online tax system onrevenue tax compliance among small taxpayers in Meru County, Kenya. *International Journal of Economics, Commerce and Management,* 3(12), 280-297.

Hayat, N., Salameh, A. A., Mamun, A. A., Helmi Ali, M., & Makhbul, Z. K. M. (2022). Tax compliance behavior among Malaysian taxpayers: A dual-stage PLS-SEM and ANN analysis. *SAGE Open*, 12(3). https://doi.org/10.1177/21582440221127190

Heritage Foundation (2018). *2018 Index of economic freedom.* https://www.heritage.org › commentary › 2018-index-ec

Humlum, A. (2019). *Robot adoption and labor market dynamics.* Working Paper, 2019.

Internal Revenue Service (2016). *Tax gap estimates for tax years 2008–2010, technical report, Internal Revenue Service.* Retrieved from: https://www.irs.gov/pub/irs-soi/p1415.pdf

International Monetary Fund (2017). *International Survey on Revenue Administration (ISORA).* Retrieved from: https://www.imf.org/en/Capacity-Development/Training/ICDTC/Courses/ISORA

Irefe-Esema, J., & Babatunde, A. (2020). Automation and revenue tax compliance: Empirical evidence from Nigeria. *American Journal of Theoretical and Applied Business.* 1-9.

John-Akamelu., C. R., & Iyidiobi, F. C. (2019). Effect of e-taxation on revenue generation system in Anambra State. *International Journal of Trend in Scientific Research and Development (ijtsrd),* 3(3), 1624-1633. https://doi.org/10.31142/ijtsrd23520

Karshner, C., & Somare, G. (Eds.). (2017). *International initiatives in addressing challenges posed by the digital economy, in: Taxation in the global digital economy*, https://www.ibfd.org/sites/ibfd.org/files/content/img/product/april_ppv_wtj_2017_01_int_4_int ernational_taxation.pdf

Kelbesa, M. (2020). *Digital service taxes and their application,* Institute of Development Studies. Available online: https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/16968/914_Digital_Service_Tax.pdf?sequence=1 (accessed on 10 February 2022).

Khaddafi, M., Aspan, H., Mohd, H., Wahyuddin, F., & Humaira, Z. (2018). Effect of perception of facilities, intensity of conduct, and satisfaction of tax payers to submission of letter by E-filing notice on tax service. *Emerald Reach Proceedings Series*, *1*, 583–587.

Klaus, P., & Holger, S. (2019). *Innovation, automation, and inequality: Policy challenges in the race against the machine.* No 320, GLO Discussion Paper Series, Global Labor Organisation (GLO)

Klynveld Peat Marwick Goerdele [KPMG] (2021). *2021 KPMG Nigeria banking industry customer experience,* https://kpmg.com/ng/en/home/industries/2021-kpmg-nigeria-banking-industry-customer-experience.html

Klynveld Peat Marwick Goerdele [KPMG] (2023). *Tax departments are driving innovation. Innovation is driving transformation,* Retrieved from: https://kpmg.com/xx/en/home/insights/2019/08/digitization-in-tax.html

Komolafe, D., & Chukwuani, O. (2020). *The impact of the finance act on digital taxation in Nigeria,* Proceedings of the 4th ICAN-MALAYSIA International Conference on Accounting and Finance (ICAF-IMDS 2022)

Kupoluyi, A. K., Oloyede, F. L., & Oyedokun, G. E. (2022). *Tax administration and taxpayers' compliance in Nigeria. Taxation for economic development,* OGB Business School Publishing, Lagos

McCluskey, W., & Huang, C. Y. (2019). *The role of ICT in propert tax administration: Lessons from Tanzania,* Retrieved on November 3, 2019 from https://www.cmi.no/publications/6880-the-role-of-ict-in-property-tax-administration-lessons-from-tanzania

Mishra, A., Shukla, A., Rana, N. P., Currie, W. L., & Dwivedi, Y. K. (2023). Re-examining post-acceptance model of information systems continuance: A revised theoretical model using MASEM approach, *International Journal of Information Management, 68*(2), 1-13. http://dx.doi.org/10.1016/j.ijinfomgt.2022.102571

Mpofu, F. Y., & Tankiso, M. (2022). Direct digital services taxes in Africa and the canons of taxation, *Laws 11*(4), 57-77. http://dx.doi.org/10.3390/laws11040057

Mukuwa, V., & Phiri, J. (2020). The effects of E-services on revenue collection and tax compliance among SMEs in developing countries: A case study of Zambia, *Open Journal of Social Sciences*, *8*, 98-108. http://dx.doi.org/10.4236/jss.2020.81008.

Musimenta, D. (2020). Knowledge requirements, tax complexity, compliance costs and tax compliance in Uganda, *Cogent Business & Management, 7*(1), 1–19.

Nawawi, A., & Salin, A. S. A. P. (2018). Capital statement analysis as a tool to detect tax evasion, *International Journal of Law and Management, 60*(5), 1097-1110. http://dx.doi.org/10.1108/IJLMA-03-2017-0024

Nigerian Bureau of Statistics (NBS) (2019). https://nigerianstat.gov.ng/ elibrary/read/1092

Nkote, N. I., & Luwugge, L. (2019). Automation and customs tax administration: Empirical evidence from Uganda, *Global Journal of Business Management, 13*(6), 001-006,

Noor Azmi, N. P. N. A., Tarmuji, I., Hamid, N. A., Rasit, Z. A., & Rashid, N. (2020). Tax compliance motives among grab car drivers in Malaysia. *Journal of Critical Reviews, 7*(11), 446–451.

Odukwu, C. V., Eke, P., Effiong, U. E., & Karimo, P. E. (2023). Tax compliance and economic growth of Nigeria: The moderating effect of tax morale, *Journal of Corporate Finance Management and Banking System, 3*(4), 42-53.

Okafor, A. (2023). *Will African countries align with the OECD framework on digital service tax?* Retrieved from: https://techcabal.com/2023/06/14/digital-economy-taxation-the-two-pillar-framework-and-africas-response/

Okundaye, K., Fan, S. K., & Dwyer, R. J. (2019). Impact of information and communication technology in Nigerian small- to medium-sized enterprises. *Journal of Economics, Finance and Administrative Science, 24*(3), 29-46. http://dx.doi.org/10.1108/JEFAS-08-2018-0086

Oladele, R. (2021). Impact of tax compliance on standard of living in Nigeria. *Journal of Accounting and Management, 11*(1), 237-250.

Olurankinse, F., & Oladeji, O. E. (2018). *Self-assessment, electronic-taxation payment system and revenue generation system in Niger*ia

Owolabi, S. A., Olaoye, S. A., & Hassan, A. K. (2020). A survey of stakeholders' perception of the decision relevance of integrated reporting in Nigerian listed firms, *Accounting and Taxation Review, 4*(3), 102-119.

Peek, S. (2020). *What is online payment system? definition, evolution and examples.* Retrieved from: https://www.uschamber.com/co/run/business-financing/what-is-onlinepayment system.

Revenue Statistics (2021). https://www.oecd-ilibrary.org/taxation/revenue-statistics-in-africa-2021_c511aa1e-en-fr

Richard, M. B., & Eric, M. Z. (2008). Technology and taxation in developing countries: From hand to mouse, *SSRN Electronic Journal 61*(4, Part 2), 1-57. http://dx.doi.org/10.2139/ssrn.1086853

Rotich, B., & David, K. (2018). *Information communication technology considerations and revenue collection in Nairobi City County, Kenya* (Masters Dissertation) to Business Administration (Management Information Systems), Kenyatta University

Rukundo, S. (2020). *Addressing the challenges of taxation of the digital economy: Lessons for African countries.* Brighton: IDS.

Sadress, N., & Juma, B. (2019). The mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and revenue tax compliance. *Journal of Economics, Finance and Administrative Science, 25*(1), 73-88. http://dx.doi.org/10.1108/JEFAS-07-2018-0066

Schultz, M., & Tropmann-Frick, M. (2020). *Autoencoder neural networks versus external auditors: Detecting unusual Journal Entries in Financial Statement Audits.* Conference: 53rd Hawaii International Conference on System Sciences At: Maui, Hawaii, USA. http://dx.doi.org/10.24251/HICSS.2020.666

Shagari, S. L., Abdullah, A., & Saat, R. M. (2017). Accounting information systems effectiveness: Evidence from the Nigerian banking sector, *Interdisciplinary Journal of Information, Knowledge, and Management, 12,* 309-335. http://dx.doi.org/10.28945/3891

Shahzad, A., Hassan, R., Aremu, A., Hussain, A., & Lodhi, R. (2021). Effects of COVID-19 in E-learning on higher education institution students: The group comparison between male and female. *Quality & Quantity, 55*(2), 1-25. https://link.springer.com/article/10.1007/s11135-020-01028-z

Smith, A. (2018). *Technology tools and the future of tax administration.* https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/Technology-tools/pi-technology-tool

Suparna, W., & Aghnia, S. E. (2020). Analysis of determinants of MSMEs revenue tax compliance in Indonesia (Case-study in working areas of Pondok Aren Tax Office). *International Journal of Advanced Science and Technology*, *29*(06), 1252 - 1267. Retrieved from http://sersc.org/journals/index.php/IJAST/article/view/11799

Syed, K. R. Z., Cassy, D. H., & Gupta, G. (2017). The moderating effect of culture on e-filing taxes: evidence from India. *Journal of Accounting in Emerging Economies; Bingley, 7*(1), 134-152. http://dx.doi.org/10.1108/JAEE-05-2015-0038

Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *Journal of Asian Finance, Economics and Business, 7*(9), 537-547. http://dx.doi.org/10.13106/jafeb.2020.vol7.no9.537

Tijani, J., & Ilugbemi, A. (2015). Electronic payment channels in the Nigeria Banking Sector and its impacts on National Development. *Asian Economic and Financial Review, 5*(3), 521-531. https://doi.org/10.18488/journal.aefr/2015.5.3/102.3.521.531

Umar, M. A., Derashid, C., Ibrahim, I., & Bidin, Z. (2019). Public governance quality and tax compliance behavior in developing countries: The mediating role of socioeconomic conditions. *International Journal of Social Economics*, 46(3), 338–351. https://doi.org/10.1108/IJSE-11-2016-0338

Wang, S., Duan, Y., Yang, X., Cao, C., & Shouyong Pan, S. (2023). Smart museum' in China from technology labs to sustainable knowledge capes. Digital scholarship in the humanities. *Digital Scholarship in the Humanities, 38*(3), 1340–1358, https://doi.org/10.1093/llc/fqac097

William, M., Riel, F., Mundia, K., & Chabala, K. (2019). *The role of information communication technology to enhance property tax revenue in Kenya, Tanzania and Zambia.* International Centre for Tax and Development (ICTD)

World Bank (2022). *Taxes & government revenue.* https://www.worldbank.org/en/topic/taxes-and-government-revenue

Youde, S., & Lim, S. (2019). The determinants of Medium Taxpayers' Compliance Perspectives: Empirical Evidence from Siem Reap Province, Cambodia. *International Journal of Public Administration, 42*(14), 1222–1233

Yu, J. (2023) Tax structure and corporate tax compliance: Evidence from China. *Economic Research-Ekonomska Istraživanja, 36*(1), 1-24. https://doi.org/10.1080/1331677X.2022.2080736

Zayol, P. I., & Gberindyer, A. C. (2018). Firm characteristics and corporate environmental disclosure by less-sensitive listed companies in Nigeria. *Ae-Funai Journal of Accounting Business and Finance (FJABAF), 8*(1), 14-34.

Zikmund, W. G., Quinlan, C., Babbin, B., Carr, J. C., & Griffin, M. (2012). *Business research methods*. United States: South-Western College, California Publisher.

Appendix I

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.857a	.735	.733	1.923

a. Predictors: (Constant), Electronic Reporting, Electronic Audit, Electronic Tax Filing, Online Payment System

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6143.951	4	1535.988	415.220	.000b
	Residual	2212.132	598	3.699		
	Total	8356.083	602			

a. Dependent Variable: Revenue Tax Compliance
b. Predictors: (Constant), Electronic Reporting, Electronic Audit, Electronic Tax Filing, Online Payment System

Coefficientsa

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.129	.499		8.272	.000
	Electronic Audit	.069	.032	.068	2.137	.033
	Electronic Tax Filing	.193	.034	.235	5.713	.000
	Online Payment System	.273	.037	.311	7.293	.000
	Electronic Reporting	.288	.036	.316	7.998	.000

a. Dependent Variable: Revenue Tax Compliance