International Journal of Accounting Research, 9(1),2024, 19-24
ISSN: 2617-9954
Open Access Journal

International Journal of Accounting Research

Research Article Homepage: www.j.arabianjbmr.com AOJP

Tax digitalisation and revenue generation system: The empirical approach

Olanrewaju Akinyosoye [a]
Adefulu Adesoga [b*]
Makinde Grace Olubisi [c]
Idowu Nwankwere [d]

[a,b,c,d] *Department of Business Administration & Marketing, Babcock University, Nigeria.*
[a] *Email: olanrewaju.akinyosoye@firs.gov.ng*
[b*] *Corresponding Email: adefulua@babcock.edu.ng, ORCID Id: 0000-0002-0762-9931*
[c] *Email: makindeo@babcock.edu.ng, ORCID Id: 0000-0002-0023-9949*
[d] *Email: nwankwerei@babcock.edu.ng*

ABSTRACT

Revenue and more revenue are the aspiration of government to ensure development is sustained. Nevertheless, the paper argued that despite the importance of revenue generation to country's economy, records has shown that based on systems in place, revenue generation especially in developing countries like Nigeria has remained relatively low. Consequently, the need to investigate if tax digitalisation dimensions could have an effect on revenue generation of Federal Inland Revenue Service (FIRS), Abuja, Nigeria is germane. The study applied the cross-sectional survey research design in obtaining primary data from 603 employees of the Federal Inland Revenue Service in Abuja, Nigeria. The simple random sampling technique was implemented while the reliable and validated tests were conducted on the adapted questionnaire before applying it for the study. Results from the multiple regression analysis revealed that tax digitalisation dimensions had a positive and significant effect on revenue generation (Adj. R2 = 0.795, (F (4, 598) = 583.786, p<0.05) with online payment system as the best predictor on revenue generation. management of FIRS should ensure accuracy of account book, relevant tax authority approval, encourage use of apple pay for remittance, should create electronic reports for taxpayers to improve revenue generation system.

ARTICLE INFO

Keywords:
Electronic Audit, Electronic Tax Filing, Online Payment System, Electronic Reporting, Revenue Generation, Digitalisation

JEL Classification:
M1, H20, H21, H26, H27

Article History:
Received: 25 Mar 2024
Accepted: 20 May 2024
Published: 30 Jul 2024

1. INTRODUCTION

The importance of efficient revenue tax generation mechanisms is underscored by the striking statistics revealed in Michigan, United States of America (IMF, 2022). The Tax Gap report published in 2022 for tax years 2012–2022 paints an alarming picture of revenue loss, with the tax gap encompassing late payments due to either voluntary action or enforcement efforts, averaging a staggering $406 billion annually during this period (IMF, 2022). This figure accounts for approximately 16% of taxes that went unpaid, reflecting a significant revenue shortfall. The decline in government revenue generation system poses a significant challenge in numerous African countries. Key contributors to this decline include reduced taxpayer compliance due to the complexity of the tax system and challenges associated with revenue tax tracking. Additionally, a lack of revenue tax transparency in the government discourages some taxpayers from fulfilling their tax obligations, as highlighted in the OECD Revenue Statistics for 2022 (OECD, 2022). In Nigeria, official records from the Federal Inland Revenue Service (FIRS, 2021) reveal a concerning revenue tax compliance scenario. Despite the existence of over 440,000 registered companies in the country, only approximately 120,000 are actively fulfilling their tax obligations to the FIRS. This means that a significant 320,000 companies remain non-compliant with their tax duties, representing a substantial loss in potential revenue (FIRS, 2021). The factors contributing to this tax non-compliance include evasion, avoidance, fraud, failure to deduct or remit taxes, obstruction, false declarations, document counterfeiting, and non-filing of tax returns, all of which signify a disregard for tax laws and regulations. Moreover, a comprehensive review of Nigeria's tax revenue data and other relevant statistics underscores the prevalent issue of low revenue tax compliance within the country (FIRS, 2021). Also, a data from the Budget office of the Federation (2021) showed that in 2016, FIRS contributed 54.6 per cent Tax-to-GDP ratio, 55.2 per cent in 2017, 58.3 per cent in 2018, and 59.0 per cent in 2019 before it tapered down to 50 per cent in 2020. Thus, revenue generation has remained low (Adeyemi & Adeduro, 2020; Klynveld Peat Marwick Goerdele [KPMG], 2022).

2. LITERATURE REVIEW

2.1 Revenue generation system

Revenue generation system according to Enahoro (2012) it refers to the ways government raise funds for the purposes of meeting its capital and recurrent expenditure. Asnafi and Hamid (2018) added that it is referred to as the aggregate amount accrued to an entity from all sources of income regardless of the size, age, and corporate status at any time. More recently, Adegbie and Akinyemi (2020) stated that revenue generation system can also be defined as tolls, taxes, import rates, fees royalties, refits and other receipts of government from whatever source. As such, the process of generating financial resources for a government is known as revenue generation system (Mabugu, 2022). Consequently, revenue generation system is the process of ensuring revenue tax compliance, tax collection, tax revenue tracking and tax revenue transparency.

2.2 Tax digitalisation

Bassongui and Houngbédji (2023) defined tax digitalisation as a process through which governments 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 (Bassongui & Houngbédji, 2023). The digitalisation of tax systems may have many features, such as the electronic filing of taxes that refers to the online submission of tax declarations (Juswanto & Simms, 2017). Digitization of tax administration entails five elements: technologies, people, managing of tax risks, financial resources, and communication (Lipniewicz, 2017). However, Besley and Persson (2014) indicated that tax systems in developing countries are characterised by high tax declarations' costs, which may discourage citizens from paying their taxes. Moreover, these manual tax systems promote corruption through the frequency of in-person interactions between taxpayers and tax collectors (Wadesango et al., 2020). Nevertheless, Bassongui and Houngbédji (2023) stressed that the digitalisation of the tax system means additional scrutiny of books, files and practices which is challenging for those businesses using legacy systems or even paper records. Interestingly, digitalisation of tax authorities is not a new phenomenon, but it is accelerating (Soteri, 2023). Consequently, this paper examined tax digitalisation through the dimension of electronic audit, electronic tax filing, online payment system and electronic reporting as discussed concisely. According to Nindyastuti and Kiswara (2014), Electronic Audit or E-Audit is a computer-assisted audit that uses electronic records to complete all or part of an audit. Hamshari et al. (2021) added that E-Audit is a method that aids examiners in achieving examination goals and gives auditors all the financial and management data necessary to combat fraud and financial wrongdoing. Electronic tax filing is the process of submitting your tax return to the government electronically, often over the internet (Abolade and Durosinmi 2019). E-filing is the process of electronically submitting tax return information to the government, usually the Internal

Revenue Service (Zubairu et al., 2020). Electronic tax filing, or e-filing, is the process of sending your completed tax return to the IRS or state tax agency over the internet (Alsyouf et al., 2023). Online payment system allows individuals and businesses to electronically exchange money and process financial transactions via the internet (Rukundo, 2020) and enables buyers and sellers transfer money between two parties, typically over the internet (Adegbite & Mustapha, 2019; Adeyeye & 2019; Sung-Bou & Dongwook, 2020). Klaus and Holger (2019) defined electronic reporting as an engine that simplifies the creation of electronic reports for information interchange with governments, banks, and other parties. Characteristically, electronic reporting includes data being automatically extracted, visualizations being automatically updated, and reports being automatically shared without anyone having to manually do this work every time (Adegbie & Akinyemi, 2020).

2.3 Empirical review

Studies conducted on tax digitalisation and revenue generation system has shown varied results. Ogbonna et al. (2022) looked into the impact of e-tax payment on revenue generation system in Nigeria and found a weakly positive association between revenue collected before and after the implementation of a capital gains tax. According to Efunboade (2014) digitalisation had a significant effect on revenue generation system. The findings reiterated that ICT is used to enhance performance in revenue administrations by reducing human error and processing times, providing readily accessible data for tax officers, promoting voluntary compliance thereby minimizing tax evasion and facilitating better decision making by tax authorities. Likewise, Eliana et al. (2018) revealed that the use of technology in the business sector have made payment by customers and revenue generation system easier for organisations. Likewise, Adegbite et al. (2019) showed that digitalisation has a positive significant and statistical impact on tax revenue generation system in Oyo State. Digitalisation is a highly effective tool which enhances taxation cash inflow in the state. In the same vein, Manu et al. (2020) reported that electronic reporting plays a positive role in boosting revenue and reducing cost sporadically. Also, Sian (2019) findings revealed that electronic reporting improves the efficiency, quality and coverage of service delivery and revenue generation system processes of an organisation. Furthermore, Obasan (2011) showed that a positive correlation exists between digitalisation and banks profitability and revenue in Nigeria. Additionally, Seema (2014) showed that technological innovations positively influence the revenue generation system in banking and financial sector. The study of Goh et al. (2016) showed that online payment system and banking automation have increased the banks revenue thereby having a positive effect. In the same vein, John-Akamelu and Iyidiobi (2019) found the study revealed that e-taxation had effect on tax revenue generation system in Anambra State. Also, Joana et al. (2013) revealed that information and communication technologies are an enabler for revenue generation system optimization for the organisation. Further, Morten (2019) reported that digitalisation and the use of IT automation increased revenue generation system, the reduction in lodgment, clearance time and costs and corruption, and ease of governance processes. In contrast, Yu et al. (2023) used time-series data and the Autoregressive Distributed Lag (ARDL) estimation approach to demonstrate that ICT infrastructure has no substantial positive impact on overall tax revenue collection. Nevertheless, it is possible to uncover tax loopholes and administer a country's taxation system effectively in the context of good governance and efficient systems. Likewise, Mahboub (2018) showed that automation does not significantly affect revenue generation. Likewise, Rami et al. (2016) revealed that digitalisation has a negative impact on revenue.

2.4 Theoretical framework

This study was anchored on the Technology Acceptance Model (TAM). 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. The Technology Acceptance Model is more applicable to online environments due to a number of benefits. First, the Technology Acceptance Model is explicit to information system application of the notions of usability and utility. In addition, Technology Acceptance Model is more economical and robust across a variety of information system applications. The Technology Acceptance Model (TAM) predicts that when economic agents are presented with new technology, a variety of characteristics influence their decision on when and how they will use it and how useful it will be (Alsyouf et al., 2023). This usefulness refers to how the digital system will improve work efficiency and accessibility. The model suggests that an effective tax administration should be proportional to incomes, to pay, convenient, and less expensive for both taxpayers and administrators. In addition, digital technology can play a role in strengthening revenue management by aiding tax authorities in achieving greater revenue tax compliance, detecting fraud, and removing corruption chances (Mascagni et al., 2021).

3. METHODOLOGY

This paper used survey research design.The study population was 10,342 employees of the Federal Inland Revenue Service (FIRS) in Abuja, Nigeria. Abuja was selected because it is the headquarters of the Federal Inland Revenue Services where innovations are decided, approved, and authorised. This study applied the Cochran's sample size formula (1977) in determining the sample size. Thus, a sample size of seven hundred and thirty-seven (737) which included an additional 30% sample size to cater for attrition rate. This work adopted the simple random sampling technique using a well-structured questionnaire as the research instrument with items adapted. A pilot test using 10% of the sample size was conducted on the questionnaire along with validity and reliability test. The validated reliability result through Cronbach's alpha coefficients from the internal consistency test showed; Revenue Generation System (α) = 0.845 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 adopted for the inferential.

4. RESULTS

Table 1. Summary of Multiple Regression Analysis for effect of Tax digitalisation dimensions on Revenue Generation System of Federal Inland Revenue Service, Abuja, Nigeria

N	Model	*B*	T	Sig.	ANOVA (Sig.)	R	Adjusted R^2	F (4, 598)
	(Constant)	14.538	8.630	0.000				
	Electronic Audit	0.462	4.223	0.000				
603	Electronic Tax Filing	0.565	4.946	0.000	0.001[b]	0.892[a]	0.795	583.786
	Online Payment System	1.218	9.628	0.000				
	Electronic Reporting	1.108	9.102	0.000				

a. Dependent Variable: Revenue Generation System

Source: Researcher's Field Survey, 2024 (see appendix one for spss output)

Interpretation: Table 1. showed the multiple regression analysis results for the effect of tax digitalisation on revenue generation system of FIRs, Abuja, Nigeria. The results showed that electronic audit (β = 0.462, t = 4.223, p<0.05), electronic tax filing (β = 0.565, t = 4.946, p<0.05), online payment system (β = 1.218, t = 9.628, p<0.05), and electronic reporting (β = 1.108, t = 9.102, p<0.05) all have positive and significant effects on revenue generation system of FIRs in Abuja Nigeria. These results revealed that the entire dimensions of tax digitalisation (electronic reporting, electronic audit, electronic tax filing and online payment system) are core predictors of revenue generation system of Federal Inland Revenue Service in Abuja Nigeria. It also shows that out of the dimensions, online payment system was the best predictor on revenue generation system. The correlation R value of 0.892[a] supports this result and it indicated that tax digitalisation has a strong and positive effect on revenue generation system of FIRs in Abuja Nigeria. The coefficient of multiple determination *Adj*. R^2 = 0.795 shows that about 79.5% variance in revenue generation system of FIRs in Abuja Nigeria can be accounted for by the proxies of tax digitalisation while the remaining 20.5% changes that occurs is accounted for by other variables not captured in the model. The predictive and prescriptive multiple regression models are thus expressed:

RGS= 14.538+0.462EA+0.565ETF+1.218OPS+1.108ER + U_i------Eqn 1 (Predictive Model)

RGS= 14.538+0.462EA+0.565ETF+1.218OPS+1.108ER + $U_{i\ i}$---Eqn 1 (Prescriptive Model)

Where:

RGS = Revenue Generation System

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 generation system of FIRs in Abuja Nigeria would be 14.538 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 revenue generation system and contributed significantly to the prediction. From the prescriptive model, it is observed

that statistically when tax digitalisation dimensions characterized by electronic audit, electronic tax filing, online payment system, and electronic reporting are improved by one unit, revenue generation system would also increase by 0.462, 0.565, 1.218, and 1.108 units respectively. The results suggested that tax digitalisation dimensions play a significant role in determining revenue generation system. Therefore, decision-makers in FIRs should prioritize applying electronic audit, online payment system, electronic reporting, and electronic tax filing of their tax system to enhance their revenue generation system.

Additionally, the *F*-statistics (df = 4, 598) = 583.786 at p<0.05) indicated that the overall model is statistically significant for predicting the effect of tax digitalisation on revenue generation system. This implies that the regression model is a good fit for forecasting the effect of tax digitalisation (FIRS) on revenue generation system 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 elucidating the variability in revenue generation system with online payment system as the best predictor on revenue generation system. Therefore, the null hypothesis (H_o) which states that Tax digitalisation dimensions have no significant effect on revenue generation system is rejected.

5. DISCUSSION OF FINDINGS

The results of hypothesis showed that tax digitalisation dimensions have a positive and significant effect on revenue generation system of Federal Inland Revenue Service (FIRS) in Abuja Nigeria. Empirically, the results from this study corroborate the work of Efunboade (2014) that digitalisation had a significant effect on revenue generation system. Likewise, Eliana et al. (2018) found that the use of technology in the business sector have made payment by customers and revenue generation system significantly easier for organisations. Building on previous findings, Adegbite et al. (2019) found that digitalisation has a positive significant and statistical impact on tax revenue generation system. That digitalisation is a highly effective tool which enhances taxation cash inflow. Also, Sian (2019) findings revealed that electronic reporting positively and significantly improves the efficiency, quality and coverage of service delivery and revenue generation system processes of an organisation. In the same vein, Manu et al. (2020) reported that electronic reporting plays a positive role in boosting revenue and reducing cost sporadically. Further, Ershaid (2021) found that there is a strong relationship between computerized taxes registers and VAT compliance. Adegboye et al. (2022) that specific ICT thresholds, industrialization and ICT play significant role for tax revenue mobilization. Supporting these findings, Ogbonna et al. (2022) while investigating the impact of e-tax payment on revenue generation system in Nigeria, found a weakly positive association between revenue collected before and after the implementation of a capital gains tax. In consonance with the previous findings, earlier works have also found that electronic taxation has a significant contribution to revenue generation system (Afuberoh & Okoye, 2014); that electronic reporting enhances the revenue generation system capacity (Sani, 2013); and that information communication technology have positive impact on organisational revenue growth (Alfonso & Noelia, 2017). Similarly, electronic payment channels have impact on the revenue generation system (Seema, 2014; Tijani & Ilugbemi, 2015). In contrast, Yu et al. (2023) used time-series data and the Autoregressive Distributed Lag (ARDL) estimation approach to demonstrate that ICT infrastructure has no substantial positive impact on overall tax revenue collection. Likewise, Mahboub (2018) showed that automation does not significantly affect revenue generation. While Rami et al. (2016) found that digitalisation has a negative impact on revenue. The divergent results could be attributed to methodological approach and industry specific.

Theoretically, the results support the Technology Acceptance Model (TAM) by Davis (1989) as theorized by Wang et al. (2023) 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. As such, taxpayers could be motivated if the digital tax procedure is useful and credible. Thus, according to Mishra et al. (2023) and Karimi et al. (2017), taxpayers perceived usefulness and perceived ease of utilizing a specific information system or information technology would favorably have influence on attitudes about an information system, as well as on individuals' intents to use and acceptance of the system. Consequently, Nawawi and Salin (2018) and Khaddafi et al. (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. Hence, the behavior of Taxpayer to self-assessment should be promoted to achieve the improved level of revenue tax compliance for enhanced revenue generation. Therefore, on the bases of the overall multiple regression results, the the null hypothesis (H_o) which states that tax digitalisation dimensions has no significant effect on revenue generation system of FIRS in Abuja Nigeria is rejected

5.1 Managerial implication

The study's outcome is significant to tax managers and management in a number of ways. The study's outcome can help them understand the impact of digital technologies on the tax landscape and how these technologies are changing the way that taxes are collected and managed. This understanding is essential for tax managers and management to be able to develop effective tax strategies and comply with tax laws. The findings of this study offers insights to help tax managers and management identify and implement new technologies and processes to improve their own tax operations with the thought that though knowledge power and employee acceptability are core but may not yield the required results due to the user's perception and ease of implementation as perceived by individuals. For example, tax managers can use the study to learn about new technologies for electronic tax filing, revenue tax compliance, and tax auditing. The findings of the present study provide information which will help tax managers and management develop and implement strategies to address the challenges of digitalizing taxation. For instance, tax managers and management need to develop strategies to protect taxpayer data and ensure that their tax systems are secured. This study's outcome on the tax digitalisation and revenue generation system is a valuable resource for tax managers and management.

6. CONCLUSION

Based on empirical findings of this study, the researcher concluded that tax digitalisation dimensions (electronic audit, electronic tax filing, online payment systems, and electronic reporting) had a positive and significant effect on revenue generation system of Federal Inland Revenue Service (FIRS), Abuja, Nigeria. Achieving effective tax revenue system could be tailored towards electronic audit, electronic tax filing, online payment systems, and electronic reporting with online payment systems as the most efficient. Therefore, this study recommends that management of FIRS should ensure accuracy of account book, relevant tax authority approval, encourage use of apple pay for remittance, should create electronic reports for taxpayers to improve revenue generation system.

Acknowledgement

This is to acknowledge individuals who participated in the research especially the Federal Inland Revenue Service, Abuja, Nigeria. The inputs of my supervisor is equally acknowledged.

REFERENCES

Abolade, T. O., & Durosinmi, A. E. (2019). *ICT and its impact on national development in Nigeria – A conceptual analysis*. Proceedings of the 15th Isteams Research Nexus Conference, Chrisland University, Abeokuta, Nigeria, 16th – 18th April, 2019. Pp 83-90. Available online at www.isteams.net. DOI Affix - https://doi.org/10.22624/AIMS/iSTEAMS-2019/V15N1P9

Acemoglu, D., & Restrepo, P. (2022). *Tasks, automation, and the rise in U.S. wage inequality*. NBER Working Papers 28920, National Bureau of Economic Research, Inc.

Adegbie, F. F., & Akinyemi, O. O. (2020). Electronic payment system and revenue generation system in Lagos State. *Journal of Accounting and Financial Management, 6*(1), 59 – 85.

Adegbite, A., Mustapha, B., & Adenike, F. A. (2019). The impact of ict on taxation: Evidence from Oyo State, *Copernican Journal of Finance & Accounting*, *8*(4), 7-25. http://dx.doi.org/10.12775/CJFA.2019.015

Adegbite, T. A., & Mustapha, B. (2019). Corporate tax avoidance practices: An empirical evidence from Nigerian firms. *Studia Universitatis Babes-Bolyai Oeconomica, 64*(3), 39 - 53. http://dx.doi.org/10.2478/subboec-2019-0014

Adegboye, A., Uwuigbe, U., Ojeka, S., Uwuigbe, O., Dahunsi, O., & Adegboye, K. (2022). Driving information communication technology for tax revenue mobilization in Sub-Saharan Africa. *Telecommunications Policy, 46*(7), 1-12. http://dx.doi.org/10.1016/j.telpol.2022.102329

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

Afuberoh, D., & Okoye, E. (2014). The impact of taxation on revenue generation system in Nigeria: A study of Federal Capital Territory and selected States. *International Journal of Public Administration and Management Research (IJPAMR), 2*(2), 22-47

Alfonso, A., & Noelia, C. (2017). *The importance of ICT in society's needs: An empirical approach through Maslow's lens*. Retrieved from: https://www.bbvaresearch.com/wp-content/uploads/2017/09/maslow_pyramid_en.pdf

AL-Salmi, M. H., Wee, S. T., & Akbar, F. (2022). *Impact of E-Audit on public organization's performance in Oman.* Proceedings of the 3rd Asia Pacific International Conference on Industrial Engineering and Operations Management, Johor Bahru, Malaysia.

Alsyouf, A., Lutfi, A., Alsubahi, N., Alhazmi, F. N., Al-Mugheed, K., Anshasi, R. J., Alharbi, N. I., & Albugami, M. (2023). The use of a technology acceptance model (TAM) to predict patients' usage of a personal health record system. *International Journal of Environmental Research and Public Health, 20*(2), 1-15. https://doi.org/10.3390/ijerph20021347

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

Arowolo, O., & Folarin, F. (2015). Tax administration in Nigeria & the challenge of it: When is the bold play? *Research Journal of Finance and Accounting, 3*(5), 9-15.

Asnafi, A. O., & Hamid, P. D. (2018). *Determinants of tax evasion in Nigeria.* Jericho, Ibadan: Bookseller Publisher.

Barros, T., Ferreira, E., Rocha, R. G., Brotas, G., Carranza, J., Fonseca, C., & Torres, R. T. (2020). The multiple origins of roe deer populations in Western Iberia and their relevance for conservation. *Animals*, *10*(12), 1-17. https://doi.org/10.3390/ani10122419

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

Bellon, M., Dabla-Norris, E., Khalid, S., & Lima, F. (2022). Digitalisation to improverevenue tax compliance: Evidence from VAT e-Invoicing in Peru. *Journal of Public Economics, 210,* 1-28. https://doi.org/10.1016/j.jpubeco.2022.104661

Besley, T., & Persson, T. (2014). Why do developing countries tax so little? *Journal of Economic Perspectives, American Economic Association, 28*(4), 99-120. http://dx.doi.org/10.1257/jep.28.4.99

Bienose, V. C., Egwakhe, A. J., Adefulu, D. A., & Akande, O. (2022). Business resilience dimensions and revenue generation: Option for family business sustainability. *Kuwait Chapter of Arabian Journal of Business and Management Review, 11*(2), 71-77.

Bogenschneider, R., & Bret, A. (2022). Do robots have to pay taxes? Taxation in the automated age. *University of Surrey, School of Law, 14*(4), 1 - 19.

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).

Chen, C-C., & Liao, C-C. (2021). *Research on the development of Online payment system combined with AIoT*. In: 2021 IEEE international conference on consumer electronics-Taiwan (ICCE-TW), pp. 1–2.

Chen, W., & Meng, F. (2023). Is corporate digital transformation a tax haven? *International Journal of Managerial Finance,* ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJMF-11-2022-0505

Cochran, W. G. (1977), *Sampling Techniques* (3rd Edition). John Wiley and Sons, New York.

Crick, J. M., Crick, D., & Chaudhry, S. (2020). Entrepreneurial marketing decision-making in rapidly internationalising and deinternationalising start-up firms. *Journal of Business Research, 113,* 158-167.

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

Efunboade, A. O. (2014). Impact of ICT on tax administration in Nigeria. *Computer Engineering and Intelligent Systems, 5*(8), 26-29.

Eliana, V., Ruiz Herrera, L., & Valencia-Arias, A., & Picón-Jácome, E. (2018). Electronic commerce: Factors involved in its adoption from a bibliometric analysis. *Journal of Theoretical and Applied Electronic Commerce Research. 13*(1), 39-70. http://dx.doi.org/10.4067/S0718-18762018000100104

Enahoro, J. A., & Jayeola, O. (2012). Tax administration and revenue generation system of Lagos State Government, Nigeria. *Research Journal of Finance and Accounting, 3*(5), 133-139.

Ershaid, D. O. (2021). The attitudes of VAT taxpayers toward the use of E-Tax Systems and their impact onrevenue tax compliance. A field study of Tabuk Region. *Journal of Contemporary Issues in Business and Government, 27*(1), 1-15.

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/

Goh, M. L., Yeo, S. F., Lim, K. B., & Tan, S. H. (2016). Understanding customer satisfaction of internet banking: A case study in Malacca. *Procedia Economics and Finance, 37*, 80-85. http://dx.doi.org/10.1016/S2212-5671(16)30096-X

Gupta, S., & Mehta, S. K. (2021). Data mining-based financial statement fraud detection: Systematic literature review and meta-analysis to estimate data sample mapping of fraudulent companies against non-fraudulent companies. *Global Business Review,* 1-24. http://dx.doi.org/10.1177/0972150920984857

Hamshari, Y. M., Ali, H. Y., & Alqam, M. A. (2021). The relationship of professional skepticism to the risks of auditing and internal control, and the discovery of fraud and core errors in the financial statements in Jordan. *Academic Journal of Interdisciplinary Studies, 10*(2), 105-105.

Haningtone, O. D. O., Simeyo, O., & Fredrick, S. O. (2017). Influence of information and communication technology on revenue collection in county governments in Kenya: A comparative study of Migori and Homa Bay County Governments. *International Journal of Recent Research in Commerce Economics and Management (IJRRCEM), 4*(1), 66-96.

He, Y., & Yi, Y. (2023). Digitalisation of tax administration and corporate performance: Evidence from China. *International Review of Financial Analysis, 90*, 1-23. https://doi.org/10.1016/j.irfa.2023.102859

International Monetary Fund (IMF) (2022). *Fiscal monitor: capitalizing on good times*. Washington DC: International Monetary Fund.

Jananga, O. H., Jared, B., & Ong'iyo, C. (2018). Influence of automation on revenue collection by county government: A case study of Nakuru County Government. *International Journal of Economics, Commerce and Management, 6*(9), 230-245.

Joana, R. G. R., Fernando, A. F. F., & José, M. M. B. (2013). Technological innovation in banking services: An exploratory analysis to perceptions of the front office employee. *Problems and Perspectives in Management, 11*(1), 34-45.

John-Akamelu, R. C., & Iyidiobi, F. C. (2018). Intellectual capital and performance of Nigerian banks. *International Journal of Innovative Finance and Economic Research, 6*(1), 60-74.

Juswanto, W., & Simms, R. (2017). *Fair taxation in the digital economy*. ABD Institute, Poicy Brief No.5, https://www.adb.org/sites/default/files/publication/390261/adbipb2017-5.pdf

Karimi, H., Kimani, M. E., & Kinyua, M. J. (2017). Effect of technology and information systems on revenue collection by the County Government of Embu, Kenya. *International Academic Journal of Information Systems and Technology, 2*(1), 19-35.

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] (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

Kumar, V., Lahiri, A., & Dogan, O. B. (2018). A strategic framework for a profitable business model in the sharing economy. *Industrial Marketing Management, 69*, 147-160. https://doi.org/10.1016/j.indmarman.2017.08.021

Lai, T. L., Liao, S.-W., Wong, S. P. S., & Xu, H. (2020). Statistical models and stochastic optimization in financial technology and investment science. *Annals of Mathematical Sciences and Applications, **5***(2), 317–345.

Lieberman, M. (2022). What Is A Revenue Generation System? https://www.square2marketing.com/blog/what-is-a-revenue-generation-system

Lipniewicz, R. (2017). Tax administration and risk management in the digital age. *Information System in Management, 6*(1), 26-37.

Mabugu, R. E. (2022). *Relationships between the economy and constitutionalism in Sub-Saharan Africa. Constitutionalism and the economy in Africa.* Retrieved from: https://www.researchgate.net/publication/265493847_Constitutional_Reforms_and_Constitutionalism_in_Africa_

Mahboub, R. M. (2018). The impact of information and communication technology investments on the performance of Lebanese banks. *European Research Studies Journal, European Research Studies Journal, o*(4), 435-458.

Manu, B., Gui, C., Isabel, H., Philipp, L., & Varun, S. (2020). *Sales automation: The key to boosting revenue and reducing costs*. Retrieved from: mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/sales-automation-the-key-to-boosting-revenue-and-reducing-costs

Martínez, Y. U., Arzoz, P. P., & Arregui, I. Z. (2022). Revenue tax collection efficiency in OECD countries improves via decentralization, simplification, digitalisation and education. *Journal of Policy Modeling, 44*(2), 298-318. http://dx.doi.org/10.1016/j.jpolmod.2022.03.003

Mascagni, G., Mengistu, A. T., & Firew B. Woldeyes, F. B. (2021). Can ICTs increaserevenue tax compliance? Evidence on taxpayer responses to technological innovation in Ethiopia. *Journal of Economic Behavior & Organisation, 189*, 172-193. https://doi.org/10.1016/j.jebo.2021.06.007

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

Morten, M. N. (2019). *Governance lessons from Denmark's digital transformation*. Conference: 20th Annual International Conference on Digital Government Research

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

Napier, C. J., & Stadler, C. (2020). The real effects of a new accounting standard: The case of IFRS 15 revenue from contracts with customers. *Accounting and Business Research, 50*(5), 474-503.

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

Nindyastuti, D., & Kiswara, E. (2014). Faktor-Faktor Efektivitas Sistem E-audit (Studi Empirik PadaE-AuditPerjalanan Dinas BPK RI Perwakilan Provinsi Jawa Tengah. *Diponegoro Jurnal of Accounting, 3*(3), 1-10.

Obasan, K. A. (2011). Information and communication technology and banks profitability in Nigeria. *Australian Journal of Business and Management Research, 1*(4), 102-107.

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.

Ogbonna, E., & Ngozi. (2022). Taxation as a Tool of Enhancing Economic Growth in Nigeria. *Central Asian Journal of Innovations on Tourism Management and Finance, 3*(10), 109-125.

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/

Olaiya, A. C., & Adekunle, O. E. (2021). Central Bank of Nigeria's bank verification number policy and its effect on deposit money banks' customers; Empirical evidence from Nigeria. *International Journal of Business and Administrative Studies*, *7*(4), 68-76. http://dx.doi.org/10.20469/ijbas.7.10002-4

Organisation for Economic Cooperation and Development (OECD) (2022). *OECD revenue statistics in Africa*.

Oriola, M. (2022, April 23). Digital taxation, an infant in Nigeria, a giant abroad. *Business Day*. Retrieved from: https://businessday.ng/bd-weekender/article/digital-taxation-an-infant-in-nigeria-a-giant-abroad-mobolaji-oriola/

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

Pomeranz, D., & Vila-Belda, J. (2019). Taking state-capacity research to the field: Insights from collaborations with tax authorities. *Annual Review of Economics, 11*(1), 755-781. http://dx.doi.org/10.1146/annurev-economics-080218-030312

Prabowo, D., & Suhartini, D. (2021). The effect of independence and integrity on audit quality: Is there a moderating role for e-audit. *Journal of Economics, Business, and Accountancy Ventura, 23*(3), 305-319. http://dx.doi.org/10.14414/jebav.v23i3.2348

Qandah, R., Taghrid, S. S., Ra'ed, M., & Bader, Y. O. (2020). The impact of knowledge power capabilities on innovation in entrepreneurial companies in Jordan. *International Journal of Organisational Analysis, 29*(4), 989-1014. http://dx.doi.org/10.1108/IJOA-06-2020-2246

Rami, H., Mansoor, M., & Smutka, L. (2016). The effect of information and communication technology on economic growth: Arab world case. *International Journal of Economics and Financial Issues (IJEFI), 6*(2), 765-775.

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 andrevenue tax compliance. *Journal of Economics, Finance and Administrative Science, 25*(1), 73-88. http://dx.doi.org/10.1108/JEFAS-07-2018-0066

Sahay, M. R., von Allmen, M. U. E., Lahreche, M. A., Khera, P., Ogawa, M. S., Bazarbash, M., & Beaton, M. K. (2020). *The promise of online payment system: Financial inclusion in the post COVID-19 era*. International Monetary Fund.

Sani, F. A. (2013). Automated internal revenue processing system: A panacea for financial problems in Kogi State. *West African Journal of Industrial and Academic Research, 7*(1), 56-69.

Satinder, S., & Ajaydeep, S. B. (2016). *Information technology in Indian banking sector and some recent developments*. Research Scholars Punjabi University.

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 SciencesAt: Maui, Hawaii, USA. http://dx.doi.org/10.24251/HICSS.2020.666

Seema, M. (2014). Technological innovations in Indian banking sector: Changed face of banking. *International Journal of Scientific Engineering and Research (IJSER), 4*(5), 11-14.

Sian, H. (2019). *Automation of government processes. K4D helpdesk report.* Brighton, UK: Institute of Development Studies.

Siew, E. G., Rosli, K., & Yeow, P. H. (2020). Organisational and environmental influences in the adoption of computer-assisted audit tools and techniques (CAATT) by audit firms in Malaysia. *International Journal of Accounting Information Systems, 36*, 1-19. http://dx.doi.org/10.1016/j.accinf.2019.100445

Simon, M. T., Gerrit, B., & Marlien, H. (2008). An integrated ICT management framework for commercial banking organisations in South Africa. *Interdisciplinary Journal of Information, Knowledge, and Management, 3,* 40-53. http://dx.doi.org/10.28945/3271

Soteri, A. (2023). *Digitalisation of tax: Dawn of the robo regulator*. Retrieved from: https://news.bakertilly.global/tax/digitalisation-of-tax/

Sung-Bou, K., & Dongwook, K. (2020). ICT implementation and its effect on public organizations: The case of digital customs and risk management in Korea. *Sustainability, MDPI, 12*(8), 1-19. http://dx.doi.org/10.3390/su12083421

Suparna, W., & Aghnia, S. E. (2020). Analysis of determinants of MSMEsrevenue 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

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

Umaru, A. F., Nasiru, M., & Yusuf, S. K. (2019). Information technology and tax administration in Adamawa State board of internal revenue Yola- Nigeria. *Nigerian Journal of Management Sciences, 23*(1), 129-137.

Vagdatli, T., & Petroutsatou, K. (2021). CBA and probabilistic risk analysis tool for non-revenue generating infrastructure projects. The case of Greece. *Case Studies on Transport Policy, 9*(1), 103-124.

Wadesango, N., Chibanda, D. M., & Wadesango, V. O. (2020). Assessing the impact of digital economy taxation in revenue generation in Zimbabwe. *Academy of Accounting and Financial Studies Journal, 24*(3).1-11.

Wang, S., Duan, Y., Yang, X., Cao, C., & Shouyong Pan, S. (2023). Smart museum'in China from technology labs to sustainable

knowledgescapes. Digital scholarship in the humanities. *Digital Scholarship in the Humanities, 38*(3), 1340–1358, https://doi.org/10.1093/llc/fqac097

Welc, J. (2020). *Evaluation of financial statement reliability and comparability based on quantitative tools other than cash flows: Additional warning signals. In Reading Between the Lines of Corporate Financial Reports* (pp. 267-319). Palgrave Macmillan, Cham.

William, M., Riel, F., Mundia, K., & Chabala, K. (2018). *The role of information communication technology to enhance property tax revenue in Africa: A tale of four cities in three countries*. ICTD Working Paper 88

Yakubu, B. Z. (2020). Effects of internal control system on revenue generation of institutions of higher learning in Nigeria. *Journal of Humanities and Social Science, 3*(3), 1-26

Yefni, Y., Murniati, S., Zifi, M. P., & Yuliantoro, H. R. (2018). What are the motivation of taxpayers in using e-filling information systems? *Jurnal Akuntansi Multiparadigma*, *9*(3), 510-525. http://dx.doi.org/10.18202/jamal.2018.04.9030

Yu, Z., Ridwan, I. L., Tanveer, M., & Khan, S. A. R. (2023). Investigating the nexuses between transportation Infrastructure, renewable energy Sources, and economic Growth: Striving towards sustainable development. *Ain Shams Engineering Journal, 14*(2), 10. https://doi.org/10.1016/j.asej.2022.101843

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

Zubairu, H. A., Oyefolahan, I. O., Babakano, F. J., Etuk, S. O., & Mohammed, I. K. (2020). Assessing the e-readiness of Nigeria for digital economy. *American Journal of Computer Science and Information Technology, 8*(2), 50-62. https://doi.org/10.36648/2349-3917.8.2.50

Appendix I

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892[a]	.796	.795	6.49098

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

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98386.206	4	24596.551	583.786	.000[b]
	Residual	25195.430	598	42.133		
	Total	123581.635	602			

a. Dependent Variable: Revenue generation system

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.538	1.685		8.630	.000
	Electronic Audit	.462	.109	.119	4.223	.000
	Electronic Tax Filing	.565	.114	.178	4.946	.000
	Online Payment System	1.218	.126	.360	9.628	.000
	Electronic Reporting	1.108	.122	.316	9.102	.000

a. Dependent Variable: Revenue generation system