EFFECT OF DIGITAL TAXATION ON REVENUE GENERATION: THE MEDIATING ROLE OF TAXPAYER AWARENESS

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ABSTRACT

This study examines how taxpayer awareness mediates the relationship between digital taxation and revenue generation in Nigeria. PLS Structural Equation Modelling (SEM) was used to analyze data from tax practitioners and economists to assess the impact of mechanisms of digital taxation on public revenue outcomes. The results indicate that computerized tax law negatively and significantly affects taxpayer awareness and revenue collection, implying that rigid or poorly explained tax law reduces tax engagement and budget performance. In addition, digital tax rates have a positive and significant impact on both revenue collection and taxpayer awareness, suggesting that open and well-structured digital tax regimes increase compliance and revenue. Taxpayer awareness is also having a positive and significant impact on revenue collection. In addition, the indirect impact of digital tax rates on revenue realization via awareness is negative, whereas the mediated impact of digital tax policies is significantly positive. The study concludes that transparent digital tax policies and high public awareness are key to improving Nigeria's digital tax revenue performance and recommends reforms to sustain this momentum

Keywords: digital taxation; revenue generation; taxpayer awareness

INTRODUCTION

The quick development of digital technologies has caused a significant shift in the world economy, creating a vast and powerful digital economy (Matyushok et al., 2021). In addition to changing social interactions, communication, and commerce, this change has brought national tax authorities around the world previously unheard-of opportunities and challenges (Yufriadi et al., 2024).

There are growing concerns about profit shifting and the erosion of the tax base, largely because traditional tax frameworks are often built around physical presence, and tangible transactions fail to capture the value created by cross-border digital activities (Adebiyi, 2023). In response, countries often guided by initiatives from organizations like the OECD have begun implementing various forms of digital taxation to ensure that

multinational digital enterprises contribute equitably to the economies where they derive profits, thereby safeguarding and enhancing national revenue bases. Mbhele (2022) noted that the emerging digital taxation regimes encompass a range of strategies such as equalization levies, digital service taxes (DSTs), and value-added tax (VAT) on digital services, all tailored to address the specificities of digital business models.

The ultimate goal of these fiscal innovations is to assert taxing authority over economic activities that, though not physically located in a jurisdiction, generate significant revenues from its market (Arnold, 2023). Effective implementation of such taxes is viewed as a strategic fiscal tool for governments to fund public services, diversify revenue bases, and adapt their economic policies to the realities of a digital world (Smith, 2022). Nigeria, as Africa's largest economy and most populous nation, is no exception. The country has experienced a rapid increase in internet penetration, mobile technology adoption, and a vibrant e-commerce and fintech landscape (Cumming et al., 2023). Recognizing the growing contribution of the digital

economy to GDP, the Nigerian government has started integrating digital transactions into the tax system. This effort signifies a move to reduce reliance on oil revenue and adopt global best practices in taxation (Umenweke, 2025).

Despite the evident potential of digital taxation to enhance Nigeria's fiscal strength, translating these policies into substantial revenue gains remains a major challenge. Adelakun et al. (2024) highlighted the inherent complexity of the digital economy, such as the cross-border nature of transactions, difficulty in tracking and valuing digital activities, and the prevalence of informal transactions as major hurdles to tax administration and compliance. A pressing issue, therefore, is how effectively digital taxation policies are contributing to actual revenue generation in Nigeria. While the regulatory framework is gradually taking shape, empirical evidence on the concrete "effects of digital taxation on revenue generation" is sparse and inconclusive (Murali et al., 2024). Moreover, public understanding and acceptance of digital tax policies play a pivotal role in their success. Taxpayer awareness,

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defined as the knowledge and understanding of digital tax obligations, rationale, and compliance procedures, is believed to mediate the relationship between policy and revenue outcomes (Belahouaoui & Attak, 2024). Lack of awareness could result in non-compliance and reduced effectiveness of tax measures, while informed taxpayers are more likely to comply voluntarily and reduce enforcement costs (Adefunke & Mayowa, 2024).

Although some recent studies (e.g., Adefunke & Mayowa, 2024; Ugbede et al., 2023; Olumoh & Sanni, 2025; Akinyosoye et al., 2024; Zubairu et al., 2025) have discussed tax compliance in Nigeria, very few have empirically examined how taxpayer awareness mediates the relationship between digital taxation and revenue generation. The existing literature often emphasizes policy or macroeconomic effects but overlooks the critical role of taxpayer knowledge, particularly in developing countries like Nigeria, where digital literacy remains uneven. This study seeks to bridge that gap by empirically analyzing the effect of digital taxation on revenue generation in Nigeria, with a special focus on the mediating role of taxpayer awareness. By evaluating variables such as the number of digital tax laws, statutory tax rates, tax revenue generated, and public education initiatives, the research aims to provide policy-relevant insights for improving tax strategies and outcomes in the digital economy.

LITERATUR REVIEW

Revenue generation

Revenue generation is the lifeblood of any government, forming the financial foundation upon which public services, infrastructure development, and social welfare programs are built (Otene et al., 2024). For a nation like Nigeria, with its vast population and significant development needs, effective revenue generation is paramount to achieving economic stability and sustainable growth (Suberu et al., 2015). This process encompasses a wide array of sources, traditionally including taxes on income, consumption, and corporate profits, as well as non-tax revenues from natural resources like oil, fees for government services, and returns on public investments. Aluko et al. (2024) posited that efficiency and equity of these mechanisms directly impact a government's capacity to meet its

obligations and foster an environment conducive to prosperity. In an increasingly globalized and digitalized world, the landscape of revenue generation is constantly evolving. The rise of the digital economy, characterized by e-commerce, online services, and cross-border digital transactions, presents both opportunities and challenges for tax authorities (Abubakar et al., 2022). While these new economic activities offer fresh avenues for expanding the tax base and boosting national income, they also necessitate innovative approaches to tax policy and administration.

Digital taxation

Mpofu (2022) defined digital taxation as the imposition of taxes on income, profits, and transactions generated from digital activities and the digital economy. This emerging area of taxation has become critical due to the borderless nature of digital services, e-commerce, and online platforms, which often operate without a traditional physical presence in the countries where they generate significant revenue (Adebiyi, 2023). Governments worldwide, including Nigeria, are grappling with how to

effectively tax these often-intangible business models to ensure fairness, prevent tax avoidance by multinational digital giants, and capture a fair share of the value created within their jurisdictions. This involves developing new legal frameworks and administrative mechanisms that can identify, assess, and collect taxes from entities that may not have a physical office or traditional workforce within the country (Bañez, 2022).

Digital tax laws and regulations

Digital tax laws and regulations are legal frameworks enacted by governments to impose taxes on the revenue generated from digital goods and services and online commercial activities. They aim to address the challenges of taxing highly mobile and borderless digital businesses (Avi-Yonah et al., 2022). Nigeria has progressively enacted and refined its digital tax laws and regulations to address the challenges and opportunities presented by the burgeoning digital economy. A cornerstone of this framework is the concept of "Significant Economic Presence" (SEP), introduced through the Finance Act 2019 and further clarified by the Companies Income Tax

(Significant Economic Presence) Order 2020. This principle allows Nigeria to tax non-resident companies that derive income from digital activities within its borders, even without a traditional physical presence. The conditions for establishing SEP include generating a gross turnover or income exceeding NGN 25 million from digital activities like streaming, data transmission, online advertising, and intermediation services, or by using a Nigerian domain name or customizing digital platforms to target the Nigerian market.

Digital tax rate

A digital tax rate refers to the specific percentage or method used by governments to levy taxes on revenues generated by digital services and goods, particularly by multinational tech companies (Pylypenko et al., 2022). This taxation is a response to the challenges posed by the digital economy to traditional tax frameworks, which typically rely on a physical presence for taxation. Many digital companies can generate significant profits in a country without having a physical establishment there, leading to concerns about "base erosion and profit shifting" (BEPS) where profits are reported in low-tax jurisdictions (Owoeye et al., 2024). Consequently, various countries have introduced their own digital services taxes (DSTs), often calculated as a percentage of gross revenues from activities like online advertising, provision of digital intermediary services (e.g., online marketplaces), and the sale of user data. The implementation of digital tax rates has been a subject of intense international debate and varying approaches. While the OECD (Organization for Economic Co-operation and Development) has been working on a global consensus for digital taxation, including its "Pillar One" proposal aimed at reallocating taxing rights, many countries have moved ahead with unilateral DSTs. These rates vary significantly across jurisdictions; for example, Nigeria has a 6% Digital Services Tax on annual turnover for non-resident providers, while other countries like France and the UK have rates around 2-3%. The rationale behind these taxes is to ensure that countries where digital services are consumed and users contribute to value creation can also claim a fair share of the resulting profits, rather than all profits being taxed solely in the company's country of residency.

Taxpayer awareness

Hamid et al. (2022) described taxpayer awareness as the degree to which individuals and businesses understand their tax responsibilities, rights, and the overall tax system. This encompasses knowledge about the types of taxes applicable to them (e.g., income tax, value-added tax, property tax), the deadlines for filing and payment, the procedures for tax assessment and collection, and the potential consequences of non-compliance. Beyond mere procedural knowledge, it also includes an understanding of how tax revenues contribute to public services and national development, fostering a sense of civic duty (Ballas & Balla, 2024). Essentially, it's about taxpayers being well-informed participants in the fiscal system, capable of fulfilling their obligations accurately and efficiently. Enhancing taxpayer awareness is a critical objective for tax administrations worldwide (Hasan et al., 2024). A well-informed taxpayer base is more likely to voluntarily comply with tax laws, reducing the need for costly enforcement measures and ultimately leading to higher revenue collection.

Fiscal Exchange Theory

Digital tax laws emerged in the mid-2010s, driven by international bodies like the OECD and national governments, to address the challenge of taxing the rapidly expanding digital economy. These laws operate on assumptions that digital businesses create significant value in user markets without physical presence, that large digital companies are under taxed, and that a level playing field and new revenue streams are necessary. They aim to ensure fairer taxation by recognizing the value derived from user contributions. However, these regulations face significant weaknesses, including a lack of global consensus leading to fragmented, unilateral taxes and potential double taxation. Challenges also arise in defining "digital services," attributing profits across borders, and managing the high administrative burden for businesses. Concerns about potential trade wars, stifled innovation, and data privacy also persist. Despite these challenges, digital tax laws remain highly relevant today due to the continued growth of the digital economy, governments' increasing revenue needs, the ongoing efforts to

combat tax avoidance, and the necessity to adapt tax systems to emerging technologies and public demands for fairness.

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was primarily propounded by Icek Ajzen in 1991, evolving from his earlier Theory of Reasoned Action (TRA, with Martin Fishbein). The core assumption of TPB is that human behavior is largely rational and can be predicted by intentions, which in turn are shaped by three key factors: attitude toward the behavior (one's positive or negative evaluation of performing the behavior), subjective norms (perceived social pressure to perform or not perform the behavior), and perceived behavioral control (one's belief in their ability to perform the behavior, considering resources and obstacles). This theory assumes that individuals weigh the potential outcomes, social expectations, and their capabilities before deciding to act. Despite its wide applicability, the TPB has several weaknesses.

It relies heavily on self-reported intentions, which may not always translate directly into actual behavior, and it assumes a rational decision-making process, potentially overlooking the influence of emotions, unconscious factors, or habitual behaviors. The model can also be criticized for its difficulty in precisely defining and measuring each construct, particularly subjective norms, and for sometimes underestimating the impact of external situational factors on behavior. Nevertheless, the TPB remains highly relevant today, being widely used across diverse fields like health psychology (e.g., predicting exercise or vaccination behavior), environmental studies (e.g., promoting recycling), and marketing, offering a robust framework for understanding and influencing human decision-making by targeting attitudes, social influences, and perceived capabilities.

Digital tax laws and Revenue generation

Anioke (2024) investigated the influence of digital tax administration on Lagos State's Internally Generated Revenue (IGR) by examining the impact of automated tax collection and the self-assessment filing (SAF) system. Employing a mixed-methods approach, the research utilized both survey and documentary data

collection, with content analysis for secondary data and descriptive statistics for primary survey data. A time series research design was adopted, viewing IGR trends from 2008 within the theoretical framework of the Unified Theory of Acceptance and Use of Technology (UTAUT). The study found that digital tax administration, through both automation and the SAF system, significantly improved Lagos State's IGR.

Ashafoke and Obaretin (2023) examined the effect of digital tax imposition on revenue generation in Nigeria. Adopting an exploratory research design, the study collected primary data via Google Forms from a sample of 200 tax experts at the FIRS and selected "BIG4" auditing firms in Lagos State, Nigeria. Data analysis was conducted using Structural Equation Modeling (SEM) via STATA software. The findings revealed a positive but insignificant relationship between revenue generation and taxes on e-commerce and content providers, while a positive and significant relationship was found with digital advertisers. The study concluded that digital tax on digital channels is strongly linked to increased revenue generation and recommended focusing strategies on collecting digital tax from these channels.

Mpofu (2022) assessed direct digital service taxes (DSTs) in African countries through a critical literature review, a qualitative methodology that does not involve sampling techniques or a specific sample size of respondents, but rather a thorough examination and synthesis of existing academic and policy documents. The findings were mixed, indicating that while DSTs offer a persuasive possibility for tax revenue maximization and improved economic growth, there are equally pragmatic arguments highlighting negative externalities stemming from poorly designed policies.

Bassey et al. (2022) employed a systematic review methodology, analyzing ninety-six publications from digital taxation, taxation, and information systems literature, without explicit mention of specific sampling techniques beyond the systematic approach. The findings led to the development of a comprehensive conceptual framework for digital tax service success, identifying fifteen

themes grouped into Context, Stakeholders, Technology, and Demonstrated Results categories for policymakers.

Mpofu (2022) utilized a comprehensive critical review of literature as its methodology, meaning it did not employ primary sampling techniques or determine a sample size in the traditional sense, but rather synthesized existing academic work. The findings presented mixed opinions on mobile money taxes: some literature supported their role in improving revenue generation, tax compliance, and reducing administration costs, while others highlighted negative impacts such as reduced financial inclusion, affordability issues, decreased mobile money usage, and increased poverty and inequality, ultimately hindering the achievement of Sustainable Development Goals.

Aidonojie et al. (2022) utilized a hybrid research method, employing online questionnaires as its primary data collection instrument. The sampling technique involved distributing these questionnaires to 324 respondents residing within Edo State, though the specific method for selecting these respondents isn't

detailed. Descriptive and analytical statistics were used to analyze the collected data. The findings indicated that Edo State's automated Personal Income Tax (PIT) system has improved PIT administration, yet it faces inherent challenges, and its legality is questionable given the existing PIT Act. The study concluded and recommended that the PIT Act be amended to legitimize and accommodate an automated system, and that the government address existing challenges. Therefore, the research hypothesis for this study posits that:

H$_0$: Digital tax laws do not significantly boost tax revenue in Nigeria.

Digital Tax Rate and Revenue Generation

Okunogbe and Tourek (2024) analyzed how lower-income countries collect more taxes, the role of technology, tax agents, and politics. The study employed a literature review methodology, synthesizing a rapidly growing body of existing evidence rather than conducting a new empirical study, meaning there are no specific sample techniques or an original sample size reported for primary data

collection. Its findings highlight that while economic growth is a factor, it doesn't automatically boost taxation; instead, targeted investments in tax capacity are essential. The review specifically identifies information technology (digitization) and the deployment and incentives of tax officials as crucial inputs, examining their roles and limitations in identifying taxpayers, verifying liabilities, and ensuring collection.

Challoumis (2024) presented a theoretical exploration rather than an empirical research study; thus, it does not outline a specific methodology involving primary data collection, nor does it specify sample techniques or sample size. Instead, drawing from the principles of the Cycle of Money theory, it finds that evolving tax systems with a balanced approach can generate enforcement savings, which in turn stimulate local economic activity by curbing escape savings that deplete community resources. The authors conceptually explore how thoughtful regulation, and appropriate subsidies can activate this money cycle, leading to an optimal economic structure, and emphasize that adapting tax policy to optimize resource allocation is crucial

for achieving sustainable economic growth and stability.

Mpofu and Mhlanga (2022) assessed digital financial inclusion, digital financial services tax, and financial inclusion in the fourth industrial revolution era in Africa. The study employed a systematic literature review and document analysis methodology, utilizing secondary data from printed, electronic, computer-based, and internet-transmitted materials, thus not involving traditional sample techniques or a sample size of human participants. The findings indicate that digital financial inclusion is significantly driving overall financial inclusion across the African continent. Furthermore, the study discovered that a large portion of African economic activities, despite potential negative consequences of the digital economy's growth, are informal and heavily supported by various digital financial services.

Mu and Zhan (2022) investigated the impact of inefficient VAT audit functions on tax revenue performance in Ethiopia's Amhara Region. Using a quantitative methodology, primary data was collected via surveys from 377 VAT-

registered taxpayers. Data analysis, employing structural equation modeling and multiple regression, revealed that inefficient VAT audits, poor tax education, resource scarcity, and outdated tax rates significantly hamper revenue performance despite the region's potential. Key findings highlighted the critical role of VAT audit and tax education, along with issues of resource scarcity and technology underutilization.

Decker (2023) examined why some local governments choose not to utilize their maximum allotted property tax rate, despite the existence of property tax rate limits (TELs). Employing an open systems governance approach as its methodology, the study conducted a panel data analysis using historical data. The sample consisted of 67 Florida counties observed over ten years, from 2008 to 2017. The findings of the analysis revealed that both the use of special districts and the age of the residential population have significant effects on local governments' decisions regarding property tax rates. This study hypothesized that:

H₀: Digital tax rate does not impact tax revenue generation and fosters sustainable economic development in lower income in Nigeria.

Taxpayer awareness and Revenue generation

Sajuyigbe (2023) studied improving income generation in Osun State, Nigeria: The Importance of Training Tax Personnel for Revenue Enhancement. This study used a survey research design, collecting data from 320 state tax officials in Osun State, Nigeria, via questionnaires. Analyzing the data with mean, chi-square, and path analysis, the findings revealed a positive link between tax officer training and revenue generation. Key challenges identified were limited training, outdated systems, poor technical integration, and scarcity of resources. The research concludes that training tax personnel improves compliance, efficiency, and revenue generation.

Seran et al. (2022) analyzed the influence of taxpayer awareness, NPWP ownership, tax collection, and taxpayer compliance on tax revenue, seeking to optimize domestic non-oil and gas revenue sources. Utilizing a quantitative survey methodology, the

research collected primary data through questionnaires from a sample of individual taxpayers registered in KPP Pratama Surabaya Wonocolo, Indonesia, selected using a convenience sampling technique. The data was analyzed using multiple linear regression. The findings indicated that taxpayer awareness significantly influences tax revenue, whereas NPWP ownership, tax collection, and taxpayer compliance were found to have no significant effect on tax revenue in this context.

Ali (2023) described the focus and rationale for research on the importance of creating tax awareness in Borno State, rather than detailing a completed study. As such, it does not specify a particular methodology, sample techniques, or sample size. Instead, the text argues that fostering tax awareness is crucial for the state's overall economic performance, as it encourages responsible citizens to pay their due taxes. The implicit finding or core assertion is that despite other income sources, taxation is vital, and therefore, emphasizing tax awareness will significantly enhance economic activities and contribute to the state's

development, mirroring practices in developed countries.

Mwakyembe and Pastory (2022) used a quantitative survey design to investigate the effect of citizen awareness and willingness on tax compliance and revenue collection in the Temeke Municipal Council. Data was collected from a sample of 100 respondents (employees, citizens, and businesspersons) via convenience and purposive sampling. Analyzing data with descriptive and regression analysis, findings showed that both awareness and willingness significantly and positively affect tax compliance and revenue collection. The study recommends honesty from officers, investment in awareness campaigns, and fostering mutual relationships to enhance compliance and willingness.

Dakhil et al. (2025) investigated tax compliance strategies on Nigeria's tax revenue generation. Using a survey research design, 3,784 FIRS tax officials in southwest Nigeria provided primary data via structured questionnaires. Data analysis, including correlation and regression, empirically showed that both voluntary compliance and tax enforcement

significantly boost revenue. The study concludes that a combined approach is most effective and recommends government investment in taxpayer education programs. Therefore, the research hypothesis for this study is stated as:

H₀: Taxpayers' awareness does not mediate the effect of digital taxation on tax revenue generation in Nigeria
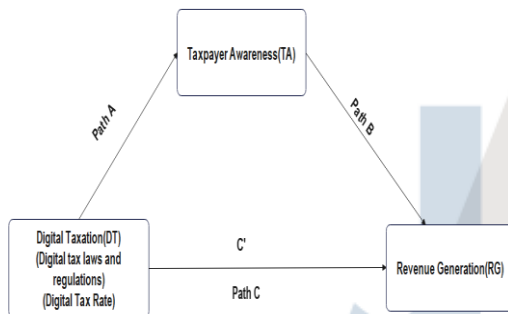

Figure 1. Conceptual Framework

RESEARCH METHOD

A survey research design was used in this study to investigate the relationship between digital taxation, revenue generation, and the mediating role of taxpayer awareness in Nigeria. The research focuses exclusively on primary data to analyze how the implementation of digital tax laws, regulations, and rates (as proxies for digital taxation) has influenced annual or quarterly digital tax revenue collected. It will also assess how taxpayer awareness mediates this relationship. Data will be meticulously collected from officials of the Federal Inland Revenue Service (FIRS). According to FIRS (2024), there are 4418 employees in the agency. The study gathered 380 data from the respondents through an online Google form. PLS-SEM was adopted as the main analytical technique for the study; this sample size was determined using Taro Yamane's sampling formula.

The constructs were measured with closed-end questionnaire items on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Digital taxation (DT) was measured with indicators of digital tax law, digital tax regulation, and digital tax tariffs. Taxpayer awareness (TA) was measured with items of knowledge about tax policy, perceived equity, and intention to pay tax. Revenue generation (RG) was covered in terms of items that reflected revenue inflow increments, efficiency in tax collection, and growth in taxable coverage. There were three parts to the questionnaire: Section A collected the respondents' demographic information, Section B captured digital taxation items, and Section C collected taxpayer awareness and revenue generation.

Ethical principles were followed in the present study. Ethical clearance was provided by the research institute's ethics committee. It was a voluntary participation, and there was informed consent prior to the completion of the questionnaire. Anonymity and confidentiality of the respondents were guaranteed, and data gathered were used solely for academic reasons. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed as the primary analytical tool due to the fact that it has the capacity to handle intricate relationships among latent constructs.

RESULT AND DISCUSSION

Table 1. Cronbach's alpha and C.R. results

Variables	Cronbach's Alpha	C.R
DLR	0.867	0.852
DTR	0.977	0.768
TA	0.998	0.889
RG	0.778	0.729

Scale consistency and general reliability were evaluated using Cronbach's Alpha and composite reliability (C.R.). All of the studies stated Cronbach's Alpha and C.R. values are more than 0.7. This result confirms the validity and reliability of the scales and validates the assessment method (Hair and others, 2016).

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	723.724
	df	66
	Sig.	.000

For the exploratory factor analysis (EFA), the KMO and Bartlett's Test outcome indicators were assessed. The results are shown in Table 2 and show that the KMO coefficient > 0.5 and the sig. < 0.05. This result shows that every prerequisite for conducting EFA has been met.

Table 3. Model fit analysis

Model fit indices	Values	Conclusion
RMSEA	0.079	Good fit
GFI	0.850	Good fit
CMIN/DF	2.953	Good fit
TLI	0.826	Good fit

The model fit was assessed to determine its fitness and validity using evaluation indices such as the Tucker-Lewis index, the goodness-of-fit statistics, the Chi-square/df, and the root mean square error of approximation. Table 3 presents the results that fit these indicators and concludes that the data is valid when compared to the recommended threshold. Accordingly, the study's model is suitable and trustworthy (Hair et al., 2010; Miles & Shevlin, 1998).

Table 4. P-value

	Relationship		P-value
Ta	←	dlr	***
Ta	←	dtr	***
Rg	←	ta	***
Rg	←	dlr	***
Rg	←	dtr	***

(***): smaller than 0.001

The connections in the structural model were investigated by p-value analysis. Therefore, the associated connections are considered significant if the p-value is less than 0.05. All of the relationships in Table 4 are deemed statistically significant when their p-values are less than 0.05.
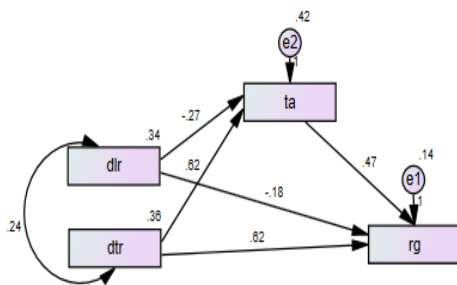

Figure 2. Result of the research model

The strength and direction of the relationship between the primary variables in this study were examined using the findings of structural equation modeling (SEM). The findings demonstrate that all route estimations are positive, suggesting that the variables along each path have positive relationships with one another. Furthermore, the significance of these correlations is supported by the p-values, all of which are less than 0.05. Consequently, in this particular relationship, a rise in the influencing variable will cause the impacted variable to increase as well. The findings of the SEM analysis that supported the study and the conclusions are summarized in Table 5. Furthermore, the SEM findings are shown in Figure 2 of this study

Table 5. SEM analytical results

Path	Estimate	S.E.	C.R.	P
ta ← dlr	-.272	.079	-3.442	***
ta ← dtr	.621	.077	8.087	***
rg ← ta	.472	.030	15.871	***
rg ← dlr	-.180	.046	-3.877	***
rg ← dtr	.625	.048	12.990	***
rg ← ta ← dlr	-.309			
rg ← ta ← dtr	.918			
SMC = .676				

The structural model was evaluated, and the proposed hypotheses were tested by studying the SEM results in Table 5. From the results, it can be concluded that digital tax laws and regulations (dlr) are negatively correlated and significantly affect taxpayer awareness (ta) (β = -0.272, p < 0.001), indicating that when digital tax laws become stringent or complex, the general public's awareness of tax

responsibilities dwindles. On the contrary, digital tax rates (dtr) provide a positive and significant influence on taxpayer awareness ($\beta = 0.621$, $p < 0.001$), meaning that clearly defined rates, when considered justly and proportionally, enhance awareness and voluntary compliance among taxpayers. The awareness of taxpayers (ta) has positively and significantly affected revenue generation (rg) ($\beta = 0.472$, $p < 0.001$), meaning that the more aware and engaged people are concerning digital taxation, the more revenue is generated for the government. The Squared Multiple Correlation (SMC) of 0.676 implies that digital taxation and taxpayers' awareness collectively explain about 67.6% of the variation in revenue collection, indicating the model has high explanatory power.

On the contrary, digital tax laws and regulations (dlr) are found to negatively and significantly impact revenue generation ($\beta = -0.180$, $p < 0.001$), implying that too rigid or poorly communicated regulations would hamper tax compliance and revenue mobilization. Digital tax rate (dtr) positively and significantly affects revenue generation ($\beta = 0.625$, $p < 0.001$), suggesting that well-priced digital taxes increase revenue inflows. The mediation analysis further reveals that the indirect impact exerted by dlr on revenue generation via taxpayer awareness is negative ($\beta = -0.309$), suggesting that unfavorable regulations could diminish revenues by way of depressing taxpayer knowledge and engagement. Hence, the indirect effect by way of dtr, however, is very positive ($\beta = 0.918$), pointing to the importance of public awareness in reinforcing the beneficial revenue-bearing effects of well-designed tax rates. In essence, the model reiterates the need to develop inclusive, understandable, and balanced digital tax policies so as to impart knowledge to taxpayers and thereby enhance revenue collection in the digital economy.

Table 6. SEM results Summary

Path	Estimate
Direct Effects	
TA ← DLR	-0.272
TA ← DTR	0.621
RG ← TA	0.472
RG ← DLR	-0.180
RG ← DTR	0.625
Indirect (Mediated) Effects via TA	
RG ← TA ← DLR	-0.309
RG ← TA ← DTR	0.918

Discussion

The study upheld that digital tax legislation and regulations (dlr) negatively and significantly affect

taxpayer awareness (ta) in Nigeria (β = -0.272, p < 0.001), which means that overly complicated or badly enforced digital tax legislation can lower public awareness and engagement in the tax system. It agrees with Mpofu (2022) and Bassey et al. (2022), who observed that poorly designed or explained digital tax policies can have adverse effects. On the other hand, digital tax rates (dtr) had a significant and positive influence on taxpayer awareness (β = 0.621, p < 0.001). This suggests that fair and transparent digital tax rates can facilitate increased awareness and participation by taxpayers. The result is in line with theoretical arguments by Challoumis (2024) and empirical findings of Mu & Zhan (2022), who identified well-calibrated tax rates with improved taxpayer behavior and awareness.

In addition, taxpayer awareness (ta) is found to be positive and significantly affecting revenue generation (rg) (β = 0.472, p < 0.001), meaning awareness is one of the channels through which public revenue mobilization and tax compliance can be increased. This agrees with Sajuyigbe (2023) and Mwakyembe & Pastory (2022), who established that awareness

campaigns and educated citizens are key drivers for better tax outcomes. It was also proven in the research that there is a negative direct significant effect of digital tax laws and regulations (dlr) on revenue collection (β = -0.180, p < 0.001), which corroborated the claims that without the citizen-led and simplified regulatory approaches, such laws tend to be harmful instead of beneficial for revenue collection. The finding testified to Mpofu (2022) and Aidonojie et al. (2022), who wrote of challenges brought by strict or outdated digital systems.

On the other hand, digital tax rates (dtr) had a significant and direct positive impact on the collection of revenue (β = 0.625, p < 0.001), which confirms that digital tax instruments like content and advertisement platform rates must be utilized in order to augment fiscal revenues. This finding is supported by Ashafoke & Obaretin (2023), who found that there was a positive and significant relationship between precision digital taxes and revenue inflow. With reference to the mediation perspective, the indirect influence of digital tax legislation (dlr) on mobilization of

revenue through awareness of the taxpayers was adverse (β = -0.309), which conforms to the fact that non-user-friendly legislations or that not well publicized decreased awareness and hence soak up the tax base. However, the indirect impact of digital tax rates (dtr) on revenue generation through taxpayer awareness was positive and highly significant (β = 0.918), confirming that appropriate tax price models can raise awareness and create greater fiscal effects. The two-mediation effect confirms Anioke's (2024) and Seran et al.'s (2022) reasoning.

CONCLUSION

The study investigated the mediating effect of taxpayer awareness in the relationship between digital taxation measures (laws and rates) and Nigeria's revenue collection, where Structural Equation Modelling constituted the focal analysis tool. Data was collected from tax administrators through structured tools. The results indicated that digital tax laws hurt taxpayer awareness and revenue collection, whereas digital tax rates have a positive effect on awareness and revenue collection. In this case, taxpayer awareness has a strong positive effect on revenue collection and mediates the effects of digital taxation policies, whereby they become more or less effective depending on clarity and enforcement. The research concludes that solidly written and justified digital tax rates are capable of improving taxpayer awareness and fiscal performance, and stringent or vague digital tax legislation may harm these results if taxpayer education and involvement cannot counter these effects. Remarkably, taxpayer awareness was also added as a principal mediator since it solidifies or undermines the effect of digital tax policies according to how far they are clear, available, and applied. Therefore, the research recommends that the Nigerian tax authorities should place a great premium on ease of use, clarity, and communication when designing and implementing digital tax legislation. The government also needs to invest in educational campaigns for taxation and sensitization of the general public with the aim of realizing the maximum advantages of digital taxation in revenue collection. It also necessitates capacity building for tax authorities, along with huge public education campaigns and sensitization

programs to facilitate taxpayer awareness and engagement.

For follow-up research, the study suggests the inclusion of taxpayers themselves, and not only tax enforcers, to be able to solicit perceptions from both sides of tax enforcement. Longitudinal research must be conducted as well to track how digital taxation effects evolve over time, while qualitative approaches may be employed to discover more in-depth cultural and behavioral dimensions behind taxpayer awareness and compliance.

There are several limitations to this study. First, the sample only included FIRS staff, which potentially restricts generalizability. Second, responses were from self-reported perceptions that are prone to bias. Third, the cross-sectional nature restricts causal inference because relationships found reflect a moment in time and not long-term effect.

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