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E-Tax System Adoption and Tax Compliance: The Role of Taxpayers Satisfaction, Taxpayers' System Competence in the Post Covid-19 Pandemic Era

Mustapha Bojuwon[1]*, Funmilola Mary Ogunleye[2], Olola Olayeye Aduwo[3], Akinyemi Wumi Ogunleye[2], Adekunle Sunday Adeogun[4], Sunday Adeniyi Olasehinde[5], Adesodun Isaac Adebayo[1], Ayodele Temitope Ekundayo[1], Ayomikun Elizabeth Aduwo[6], Olufemi Philip Ogunrinde[1]

[1]Department of Accounting, Faculty of Management Sciences, Federal University Oye-Ekiti, Nigeria, [2]Department of Business Education (Accounting), Bamidele Olumilua University of Education, Science and Technology, Ikere, Ekiti State, Nigeria, [3]Olusegun Agagu University of Science and Technology Okitipupa Ondo State, Nigeria, [4]Department of Estate Management, University of Ilorin, Ilorin. Nigeria, [5]Department of Business Administration, Faculty of Management Sciences, Federal University, Nigeria, [6]Federal Polytechnic Orogun Delta State Nigeria, Nigeria. *Email: bojuwon.mustapha@fuoye.edu.ng

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ABSTRACT

This study examined the nexus between e-tax system adoption and tax compliance through the mediating and moderating role of taxpayer satisfaction and taxpayer system competence in the post Covid-19 pandemic era in Nigeria. A quantitative method of analysis was employed through an adapted questionnaire which was distributed to 480 taxpayers, asking about their thoughts on e-tax system adoption regarding compliance costs, security, quality of service, and time spent filing returns. The findings reveal a significant and positive relationship between each element of hypothesis one (H1a-H1d) and tax compliance. Hypotheses 2b, 2c, and 2d also showed significant positive relationships with taxpayer satisfaction. However, cost as an e-tax system adoption factor did not significantly affect taxpayer satisfaction (H_{2a}: $\beta = -0.051$, $t = 0.153$, $P \geq 0.010$). Conversely, H_3 revealed a substantial and positive correlation between e-tax system competency and tax compliance ($\beta = 0.042$, $t = 5.606$, $P \leq 0.05$). The indirect effect of taxpayer satisfaction on the link between e-tax system adoption influencers and tax compliance was also found to be significant, while taxpayers' competence did not significantly moderate the SAT-SMP path to a positive level ($H_{4a\text{-}d}$: $\beta = 0.078$, $t = 0.564$, $P > 0.05$). Taxpayers' Competence moderates the relationships between service quality, taxpayers' satisfaction and tax compliance indicating that higher taxpayers' competence strengthens the positive effects of tax compliance outcomes (H5a-b: $\beta = 0.098$ $t = 12.112$, $p > 0.05$). The study contributes novel insights into the factors influencing e-tax adoption and compliance in a developing nation, offering valuable data on taxpayer satisfaction and system competence that can inform policy and practice in Nigeria, by providing data on taxpayer satisfaction and e-tax system competence.

Keywords: Competence, E-Tax System Adoption, Taxpayers' Satisfaction, Tax Compliance
JEL Classifications: H26, H 83, O33

1. INTRODUCTION

Taxation has been characterized as the power behind the economic growth of any nation, which has long given the importance of good value to improve tax compliance, exploit market value, and achieve exceptional implementations. Over the past few years, there have been improvements in internet use across the globe for numerous endeavors. As states' and countries worldwide have continued to rely on technology for modern tax administration, this trend has not been overlooked (Kamara and Kamara, 2024; Martínez-

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Vázquez et al., 2023).The international tax community encouraged electronic tax (e-Tax) systems for the past few years as part of technical assistance programmes to modernize and strengthen tax administration (Nose and Mengistu, 2023). Given its efficiency, lower compliance costs, convenience, flexibility, and improved accountability, e-Tax platforms are now used in developing and wealthy nations. Over 100 Countries already employed electronic tax systems (Ike and Bright, 2023; Okunogbe and Santoro, 2023a). furtherance to this move by the international communities of the world, the Nigerian government introduced the integrated tax authority system (ITAS) which was launched through the Federal Inland Revenue Service (FIRS) in 2013 (Adeyeye et al., 2022).

Part of the goals of the effort is to promote effective tax administration, not to outdo several State Internal Revenue Services (SIRS) that have started using the e-Tax platform to streamline the process of filing yearly employers' tax returns (Aliyu et al., 2022). With its acceptance taxpayers have fully-fledged, adopting the e-tax system adoption approach, which has functioned as a replacement for the manual tax filing system, that the COVID-19 pandemic mayhem have occasioned on tax compliance(Christopher and Turyasingura). The most successful technique of engaging with taxpayers is through the electronic filing of their tax returns, which taxpayers have fully utilized due to the pandemic. This massive technological transformation impacts all aspects of humanity, including personal, educational, and professional life (Okwir, 2018). As a result of the constraints imposed by the manual system of filing taxes, the e-tax system has grown in popularity as a substitute for the manual tax filing system, which reduces the level of personal contact. Taxpayers' have taken advantage of e-tax system adoption to file their tax returns with appealing, precise, and appreciated evidence.

It turns out to be more effective to introduce the digital economy in Nigeria as an integrated component in the evolution of information technology utilized in submitting tax returns by taxpayers (Owusu et al., 2021). Registration and acquisition of a unique tax identification number are now required for all registered businesses regardless of size (Umenzekwe et al., 2023). Implementing an e-tax system has become more important for tax compliance; they are no longer exempted from these benefits. Kasyoka et al. (2022) posited that available human resources lack the technological capability to implement and operate an e-tax system. However, measures such as internet availability, virtual conferencing in providing orientation for the taxpayers, and internet filing continue to increase among taxpayers.

In the post economic downturns, taxpayers anticipated to operate mainly as a security net for the level of compliance, with a diverse taxpayers (Martínez-Vázquez et al., 2023). This possibly will not elongate the case, as their critical role was no longer fulfilled. Notably, taxpayers who are owners of businesses, have suffered due to the pandemic. Also, the pandemic changes perceptions and influenced the e-tax system adoption and compliance with tax payment (Igbojekwe et al., 2015; Mu et al., 2022). The Coronavirus pandemic has influenced the global economy, with individuals and businesses taking dramatic steps in response to the unprecedented pandemic (Okunogbe and Santoro, 2021). COVID-19 pandemic seems to have had an extraordinary detrimental impact on the world economy, resulting from increases in global unemployment and a drop-in tax compliance (Adeyemo, 2012; Dwivedi et al., 2020).

The micro-businesses employ fewer run by relatives of one or two personnel, leaving them especially vulnerable to the pandemic consequences. This condition has kept the economy afloat because of the SMEs' essential functions worldwide. In 2020, the United Kingdom, for example, has 5 million enterprises, accounting for over 99% of all economy, engaging 13 million citizens, and generating over 1.5 trillion dollars. Furthermore, taxes from the sector account for over 90% of businesses in Nigeria (Adeyemo, 2012; Adeyeye, 2019; Umar and Masud, 2020).

The e-tax system adoption was improving prior to the occurrence but has reduced due to the authorities' curfews and restrictions, resulting in a significant fall in the usage of e-tax filing, resulting in a reduction in tax compliance (Mascagni and Santoro, 2021). As a result of the limits, the tax authority will have to discover ways to reach taxpayers and make a proposition online support through the internet to address this significant challenge. On the other hand, most taxpayers lack the resources to use the e-tax system successfully in filing their returns, which negatively influences tax compliance. However, the e-tax system has improved the Nigeria ability to generate income and the e-tax system portal's deployment has yielded over N664 billion in June 2021 (Oloyede, 2022). This e tax platform was designed to increase tax receipts collection and boost accountability and transparency in the tax administration system. Previous studies have shown that e-tax system adoption substantially impacts tax compliance in industrialized countries, whereas taxpayers in developing countries have a severe shortfall (Okunogbe and Santoro, 2023b). Surprisingly, this study attentions is focus on the influencing factors of e-tax system adoption and the overriding flexibility that can substantiate the various and ambiguity in literature (Kamara and Kamara, 2024). This study examned the operational association among e-tax system adoption factors and tax compliance by considering part of taxpayer competence and taxpayers' satisfaction as a moderator and mediator of this association in Nigeria.

2. LITERATURE REVIEW

The increasing adoption of electronic tax filing, extending from developed to developing nations, has demonstrably reduced errors and opportunities for corruption (Nwabachili et al., 2024). The ability for businesses to operate without a physical presence across borders presents challenges to traditional taxation methods (Hermanto et al., 2022; Rukundo, 2020). The "digital conflict" happens mainly because countries want to tax income made by foreign digital service providers that operate in their area without having a physical location, concentrating on direct taxes and new tax laws. Drawing upon core tax theory principles, Application of Tax Theory to the Digital Economy, examining the disruptive tax implications of digital business models and assesses the effectiveness of current tax laws (Harpaz, 2021). The analysis reveals that tax claims by countries are deemed unjustified and inconsistent with fundamental tax theory principles, leading to various administrative, legal, and economic challenges that

necessitate policy solutions (Night and Bananuka, 2019). The Digital Services Tax (DST) offers the potential for significant tax revenue for market jurisdictions and can be implemented independently or through international agreements (Shome, 2018).

Unlike income tax approaches that consider foreign digital entities as suppliers, the Digital Services Tax (DST) treats them as customers, a distinction that aligns with tax principles and complements other tax initiatives (Junquera-Varela et al., 2021). Furthermore, Christensen and Hearson (2019) advocate for the United Nations to establish a Global Internet Tax Agency (GITA) to serve as an impartial platform for political discourse and technical guidance in digital taxation. Recognizing the global nature of the digital economy, Olbert and Spengel (2019) emphasized the needs for international cooperation and organizations to provide technical support for successful global implementation, with their report aiming to simplify complex technical concepts to promote awareness of digital taxes. This understanding is important for gaining international support, ensuring compliance, and fostering global tax collaboration (Mosquera Valderrama et al., 2018).

Despite recent ongoing efforts to reform the Nigerian national tax systems, significant changes have consistently faced resistance, resulting in revenue collection that remains inadequate for effective governance and service delivery. Tax collection is hampered by high evasion rates among big corporations and affluent individuals, alongside substantial direct assessment burdens imposition on lower-income populations (Lucas-Mas and Raul Felix, 2021). Given the significant debt burdens incurred by countries worldwide due to COVID-19, a thorough examination of how to improve tax systems is of almost important. Dom et al. (2022), argued that Innovations in Tax Compliance: Building Trust, Navigating Politics, and Tailoring Reforms is of great important for tax reforms, the study propose a new conceptual framework based on prior research and experience to guide more successful reform initiatives. The study advocated for a greater focus on the interconnected goals of fostering trust, navigating political opposition, and tailoring reforms to specific local contexts, which can be achieved by identifying the most significant obstacles to changes (Andersen et al., 2010). This approach can lead to enhanced compliance, a fairer system, increased revenues, state capacity building, sustained political support for further reforms, and an improved fiscal relationship between citizens and governments (Gaber and Gruevski, 2018; Mullins et al., 2020).

2.1. Cost and Tax Compliance

The cost incurred by taxpayers in filing tax returns significantly influences their decision to adopt modern technology over manual systems to reduce compliance expenses (Le et al., 2021; Muturi and Kiarie, 2015), with the e-tax system being favoured for its lower cost and reduced time compared to manual filing, which requires internet proficiency (Umar and Masud, 2020; Night and Bananuka, 2019), as evidenced by the lengthy tax payment times in populous cities (Indah and Setiawan, 2020). To achieve a high tax-to-GDP ratio, a simpler tax system that encourages compliance is necessary, and while e-filing generally saves time and money for both tax authorities and taxpayers due to faster processing (Hossain and Azam 2019).

- H_{1a}: Cost as an e-tax filing system adoption underlying variable negatively influence tax compliance.
- H_{2a}: Cost is related to taxpayers' satisfaction negatively.

2.2. Services Quality and Tax Compliance

Service quality significantly influences e-tax system adoption and drives taxpayer satisfaction, as taxpayers assess the tax authority's service level to assess their continued use of the system, thereby affecting tax compliance (Mustapha et al., 2021). Negative perceptions of service increase the likelihood of non-filing, while positive perceptions can enhance contentment and encourage compliance, contrasting with the complaints and non-filing that may result from poor service (Yefni et al., 2018). They claimed that unfairness perceptions motivate taxpayers to exit relationships if unsatisfied with the service they receive. Improved service quality according to, enhances tax compliance and taxpayer satisfaction. Taxpayer satisfaction and compliance can both benefit from improved service quality. Hence, Siregar et al. (2019) posit a system viewed as beneficial and simple is more likely to be adopted easily and enhances tax returns filling electronically and likely spur voluntarily filing. Most studies on e-tax systems has focused on taxpayer satisfaction as a criterion for assessing tax compliance (Awasthi et al., 2019; Hossain and Azam, 2019; Mascagni and Santoro, 2021; Okwir, 2018; Otekunrin et al., 2021).

- H_{1b}: Service quality as an e-tax filing adoption underlying variable positively affects tax compliance.
- H_{2b}: service quality is associated to taxpayer satisfaction positively.

2.3. Convenience and Tax Compliance

Convenience significantly drives the desire to adopt e-tax systems by reducing the time and enhancing the experience of filing tax returns, allowing for quick and efficient submission from any location (Rahman et al., 2021; Masunga et al., 2020). This convenience metric for service quality improves time efficiency and provides taxpayers with reliable and likely compliant services at their discretion, encompassing the ability to make decisions, access, and benefit from the new innovation (Rahman et al., 2021).

- H_{1c}: Convenience as an e-tax filing adoption underlying variable positively affects tax compliance
- H_{2c}: Convenience is associated to taxpayer satisfaction positively.

2.4. Privacy and Tax Compliance

Data security is important, just like with any other e-Tax platform. Security is one of the main issues with e-filing because cybercrime seems now to be a commonplace which has characterise the Nigeria filling environment. Highly private financial and tax information is electronically kept on the site (Neuman and Sheu, 2021). Data protection may be compromised as a result of an unscrupulous hacker. Potential taxpayers should be confident in the safety and security of the e-tax system filing domain. The interface design, network issues, lack of human traces, financial security, and privacy may make the settings for the e-tax system less than ideal (Haning et al., 2019). Rahman et al. (2018) cited privacy as a significant determinant of whether or not taxpayers file their

tax returns online. This process concerns the database's ability to save the taxpayers' personal information. It is crucial for forging a lasting connection between the tax authority and the taxpayers' (Taing and Chang, 2021). These variables are important in light of the connection between tax compliance and taxpayer privacy.

- H_{1d}: Privacy as an e-tax filing adoption underlying variable positively affects tax compliance.
- H_{2d}: Privacy is positively related to taxpayer satisfaction.

2.5. E-Tax System Adoption and Tax Compliance: Interceding Role of Taxpayers Satisfaction

In relation to empirical review, it seems that there are been scholarly consensus that have identifies taxpayer satisfaction as important for behavioral characteristics, with increasing adoption of e-tax systems observed (Neuman and Sheu, 2021; Sanga, 2019), prompting experts to highlight the link between e-tax implementation and enhanced tax compliance. However, while business taxpayers are more inclined to adopt e-tax systems, individual income taxpayer's face barriers such as limited resources, technological skills, administrative unpredictability, and staffing issues, compounded by double taxation ambiguities across government levels (Neuman and Sheu, 2021). The e-tax system, defined as a website providing online tax services like obtaining identification numbers and submitting returns (Masunga et al., 2021), that seems to improve tax compliance by facilitating quicker access to tax preparation without physical visits to tax offices, benefiting both taxpayers and tax officials through timely submissions (Masunga et al., 2020; Daniel and Esther, 2019), although Do et al. (2022) argue that non-compliance stems from ineffective governance, lack of representation, and unclear tax policies.

Taxpayers are more likely to comply voluntarily with a transparent tax system when they trust that the government will utilize funds appropriately and treat all citizens equitably. While mandatory compliance exists, fostering a positive attitude towards filing and paying taxes significantly enhances voluntary compliance. The adoption of an electronic tax system hinges on user satisfaction, perceived usability, and behavioral intention, implying that the system must be user-friendly, satisfying, and motivating for taxpayers (Serim et al., 2014).

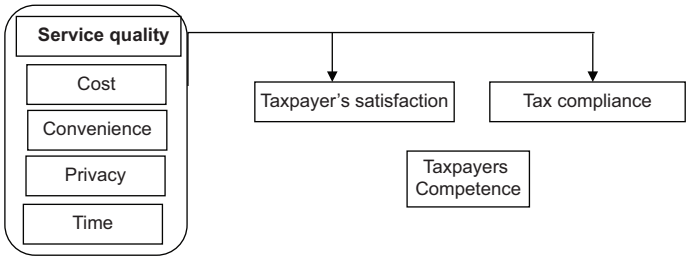
Research on tax compliance in Kenya indicates a significant positive correlation between small taxpayers' adoption of an e-tax system through online registration, filing, and payment and their compliance levels (Shafique et al., 2021), suggesting increased government revenue potential through e-tax adoption. Timely and complete tax payment is crucial for governments to fund public services and facilitate wealth distribution (Daniel and Esther, 2019), a need heightened by the COVID-19 pandemic in the current global economic climate (Dwivedi et al., 2020), as taxation is a fundamental mechanism for governments worldwide to generate essential funds for their obligations (Mosquera Valderrama et al., 2018). Despite the significance of taxation and various reforms like tax education and online services, Mullins et al. (2020) noted that non-compliance persists, sparking scholarly interest in its causes. Owusu et al. (2021) suggest that inadequate measures against tax evasion by authorities increase non-compliance. Consequently, the optimal approach for developing nations like Nigeria to achieve full tax compliance remains sacrosanct, with one potential solution of subscribing to electronic tax system that enables self-assessment and leverages taxpayer satisfaction and skills to influence and manage compliance.

- H_{3a}: Taxpayers' satisfaction is positively related to tax compliance.
- H_{4a}: Taxpayers' satisfaction plays a positive role in the relationship between cost and tax compliance, acting as an intermediary.
- H_{4b}: Satisfied taxpayers mediate how much service quality impacts their willingness to comply with tax laws.
- H_{4c}: Whether taxpayers find the tax system convenient influences their satisfaction, which in turn affects their willingness to comply with tax obligations.
- H_{4d}: Taxpayer's comfort level with the privacy aspects of the tax system influences their satisfaction, which subsequently affects their inclination to comply with tax regulations.

2.6. Moderating Role of E-tax System Competence in E-tax System Adoption and Tax Compliance

Even while the tax return platform interface is user-friendly, it can still be challenging for taxpayers, particularly if they seek to file their taxes without the assistance of consultants due to the technical know-how and proficiency needed to complete and submit some tax forms (Ershaid, 2021). The ability to effectively use technology to connect, engage, and communicate with the tax authority is known as that of the e-tax system (Akram et al., 2019). The platform must be simple for taxpayers and their representatives to use (tax consultants). The website is simple to use, gives taxpayers an overview of all transactions, and is simple to navigate. In other words, competence is the ability to confidently and appropriately use technology. Taxpayer self-efficacy, information technology knowledge, effort expectation, presentation expectation, simplifying conditions, and societal effect are defined as fundamental elements of the E-tax system concept (Hammouri and Abu-Shanab, 2017). One significant advantage of the e-tax system is that it gives taxpayers access to file their tax returns and information about their level of tax compliance. For the taxpayer's convenience, enrollment should be possible in <48 h, and the taxpayer should receive a message with the passcode, which they can modify. For the tax authority to encounter better taxpayer compliance from the taxpayers, this study suggests that the level of intelligence of the adoption of the e-tax system in filing returns and paying taxes must be

Figure 1: Conceptual Framework adopted and Modify from the Heuristic research model



Source: Authors' design (2026)

strengthened and modified with more satisfaction for intending taxpayers. In other words, tax authority intelligence will moderate the impact of taxpayer satisfaction on tax compliance.

- H_5: e-tax system competence moderates the taxpayers' satisfaction and tax compliance relationship.

3. METHODOLOGY

A survey research design was adopted using self-administered questionnaires conducted in Ibadan, Oyo State, Nigeria, to examine the relationships between e-tax system adoption factors cost, service quality, convenience, and privacy (informed by Adeyemo, 2012; Ali et al., 2017; Basoga, 2019; Mararia, 2014) and tax compliance, while also assessing the mediating and moderating roles of taxpayer satisfaction (measured by 5 items) and e-tax system competency (measured by 4 items, based on Ajayi and Yidiat, 2021). Tax compliance itself was evaluated using 6 items, drawing from prior research (Muturi and Kiarie, 2015; Night and Bananuka, 2019). The participants were taxpayers with unique tax identification numbers who had experience filing their tax returns electronically and possessed knowledge of the e-tax system.

A 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," was employed to measure all constructs. Adhering to ethical guidelines, participation was voluntary, and respondents were assured of data confidentiality and anonymity. Out of 380 initially collected responses post a 3-month university strike in Nigeria (Ibadan, Oyo), 19 outliers and non-engaged respondents were removed, resulting in a final sample of 361 valid responses, representing an approximate 95% response rate. Descriptive and inferential statistics were used to detail the adequate sample frame and respondent demographics. The psychometric properties of the measurement model and the hypothesized structural model were then evaluated using the partial least square structural equation modelling (PLS-SEM) technique.

4. RESULTS AND DISCUSSION

4.1. Descriptive Profile of the Respondents

Figures 2-4 illustrate the demographic profiles of the respondents' using frequencies and percentages. Regarding gender, 58% (211) were male and 42% (150) were female, suggesting gender parity among small and medium-sized enterprises in the studied region of Nigeria. In terms of educational qualification, 45% (161) held undergraduate degrees, 32.0% (120) possessed other certificates, and 28.0% (80) had postgraduate degrees. Concerning their experience with e-tax systems for filing returns, a majority of 71% (255) had <5 years of experience, while the remaining 29% (106) had more than 5 years of experience.

4.2. Measurement and Structural Models

This study employed a two-stage partial least squares structural equation modelling (SEM-PLS) approach to analyse both the measurement and structural models. Convergent validity (CV) was assessed using factor loadings (FC), average variance extracted (AVE), and composite reliability (CR) to determine how well the instrument's items measured their respective concepts. As shown in Table 1, all items exhibited outer loadings exceeding the recommended 0.5 threshold, and composite reliability, including Cronbach's alpha and rho A, surpassed the suggested 0.7 level

Figure 2: Gender

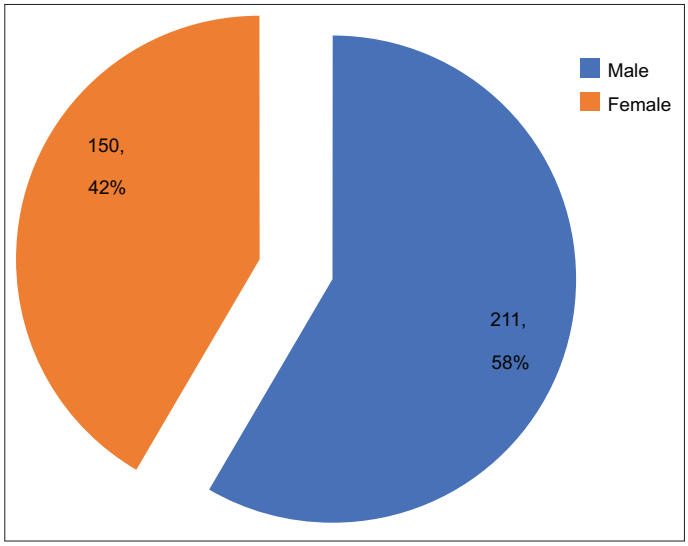


Figure 3: Qualification

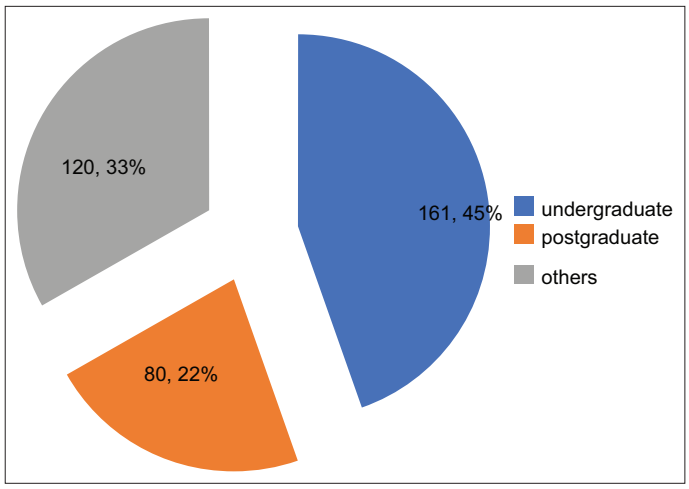
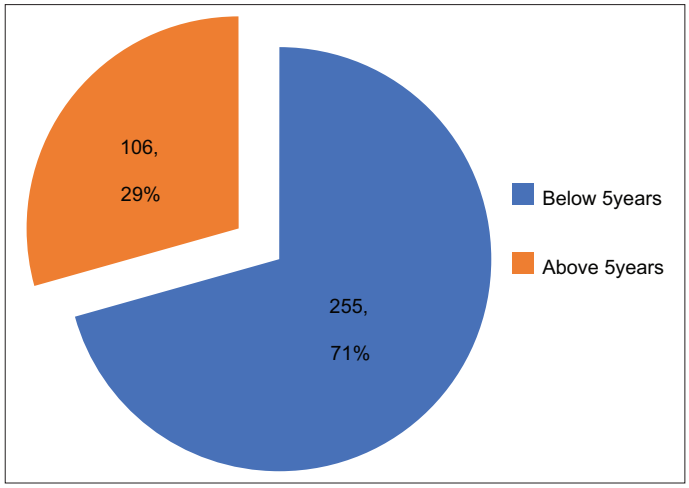


Figure 4: Experience in use



(Hair et al., 2020). Consequently, the overall measurement model demonstrates an acceptable fit and moderate predictive capability, further supported by AVE values exceeding the 0.5 threshold, confirming sufficient convergent validity for the constructs.

4.3. Discriminant Validity

Table 2, following the Farrell and Rudd (2009) criterion, illustrates that for each element of the model fit, the square root of the average variance extracted (AVE) for each latent variable is greater than its correlation with other variables, both within and between constructs. Furthermore, as recommended by Fornell and Larcker (1981), all Heterotrait-Monotrait (HTMT) values in our observed data were below the 0.9 threshold (Table 2), indicating satisfactory discriminant validity among the variables, a correlation ratio developed based on the Cohen (1992) criterion analysis.

4.4. Collinearity Statistics

In evaluating the estimation process, multicollinearity among the indicators and between exogenous latent variables was assessed by calculating the Variance Inflation Factor (VIF) for each, as presented in Table 3. The results indicate no significant collinearity issues, as all VIF values are below the threshold of 3 (García et al., 2015; Thompson et al., 2017).

Table 1: Measurement model latent variables

Items	Loading	CA	Rho_A	CR	AVE
CT1	0.745				
CT2	0.731				
CT3	0.787	0.791	0.791	0.878	0.705
CT4	0.851				
CV1	0.849				
CV2	0.856	0.784	0.791	0.861	0.608
CV3	0.814				
ETSC1	0.799				
ETSC2	0.902	0.854	0.887	0.911	0.774
ETSC3	0.934				
PR1	0.843				
PR2	0.830	0.806	0.809	0.885	0.721
PR3	0.874				
SQ3	0.868				
SQ1	0.837				
SQ2	0.884	0.874	0.883	0.913	0.725
SQ4	0.815				
TC1	0.733				
TC2	0.775				
TC3	0.911	0.871	0.879	0.907	0.663
TC4	0.859				
TC5	0.782				
TS1	0.736				
TS2	0.840				
TS3	0.965	0.913	0.926	0.933	0.702
TS4	0.875				
TS5	0.813				
TS6	0.780				

Source: Authors Computation 2026

4.5. Structural Model

In addition to the measurement model, the structural model was evaluated using correlation coefficients, R-squared, t-statistics, P-values, and f^2 through a bootstrap of 5000 samplings. The findings indicate a significant and positive relationship between each element of hypothesis one ($H_{1a\text{-}d}$) and tax compliance. Hypotheses 2b, 2c, and 2d also showed significant positive relationships with taxpayer satisfaction. However, cost as an e-tax system adoption factor did not significantly affect taxpayer satisfaction (H2a: $\beta = -0.051$, $t = 0.153$, $P > 0.010$). Conversely, H_3 revealed a substantial and positive correlation between e-tax system competency and tax compliance ($\beta = 0.042$, $t = 5.606$, $P < 0.05$). The indirect effect of taxpayer satisfaction on the link between e-tax system adoption influencers and tax compliance was also found to be significant, while taxpayer 'competence did not significantly moderate the SAT-SMP path to a positive level (H4a-d: $\beta = 0.078$, $t = 0.564$, $P > 0.05$).

The first hypothesis's coefficient of determination (R^2) indicates that cost, service quality, convenience, and privacy collectively explain 95% of the variance in tax compliance, with security exhibiting the most substantial path coefficient (0.893). These factors also significantly impact taxpayer satisfaction, explaining 63.4% of its variance, with cost having the strongest influence. The R-squared value of 0.952 for the relationship between e-tax system adoption and tax compliance suggests that e-tax system competence explains 95.2% of the variance in tax compliance, leaving 4.8% explained by other factors. Following Hair et al. (2020), substantive significance (f^2) was also reported (Table 4), revealing large effect sizes (>0.35) for the paths of security to tax compliance and cost to taxpayer satisfaction, while convenience to tax compliance showed a small effect size (0.01-0.13). Other pathways had inconsequential effect sizes. Overall goodness-of-fit (GOF) indices indicated a statistically adequate model (SRMR = 0.039; NFI = 0.833), as SRMR is below 0.08 and NFI is between 0 and 1 (Schumacker and Lomax, 2016).

4.6. Discussion of Findings

The in-depth analysis of this study suggests the sustained adoption of the e-tax system for filing returns by Nigerian taxpayers, evidenced by significant usage among respondents. The identified e-tax system parameters are crucial in determining increased taxpayer compliance. The report's indication of substantial non-oil tax revenue suggests

Table 2: Discriminant validity (Fornell-Larcker criterion)

Constructs	Cv	Ct	E-Tsc	Pr	Sq	Tc	Ts
Convenience	0.840						
Cost	0.651	0.780					
E-tax system competence	0.896	0.662	0.880				
Privacy	0.695	0.882	0.775	0.849			
Service quality	0.611	0.437	0.806	0.537	0.851		
Tax compliance	0.795	0.638	0.912	0.721	0.584	0.814	
Taxpayers satisfaction	0.841	0.677	0.971	0.818	0.742	0.933	0.838

Source: Authors computation 2026. a*Diagonal values in bold are the square root of AVE when using Fornell-Larcker's criteria

a positive impact of e-tax system adoption on government income. Despite the COVID-19 pandemic, the study's five hypotheses explicitly link e-tax system-related influences, competence, taxpayer satisfaction, and tax compliance. Notably, all factors except cost which showed an inverse and insignificant relationship despite e-filing being generally cheaper positively and significantly correlate with tax compliance. Hypotheses H1b-H1d concluded that enhanced service quality, convenience, and taxpayer privacy protection within the e-tax system lead to greater tax compliance.

The study's findings align with previous research, strongly supporting the second hypothesis that taxpayer satisfaction infers compliance. A significant correlation exists between the implementation costs of the e-tax system and taxpayer satisfaction, indicating user contentment with the innovation. Service quality also positively impacts taxpayer satisfaction, suggesting that increased focus on quality leads to greater satisfaction and system adoption. Hypothesis three's affirmation is significantly supported by Yusuf's (2022) claim that e-tax system competency enhances tax compliance, a finding corroborated within the Nigerian context. This aligns with Ratnawati and Tah's (2021) study, which links e-tax system competence to improved services and taxpayer satisfaction (Hoyt et al., 2006). The unique contribution of this paper lies in demonstrating the mediating role of taxpayer satisfaction, as taxpayers seek pleasure, which mediates the relationship between e-tax system adoption parameters and tax compliance, ultimately showing a positive impact of taxpayer satisfaction on tax compliance, reflected in the growing use of the e-tax system.

Table 3: Structural model multicollinearity (inner VIF values)

Variables	SAT	SMP
Convenience	2.452	2.570
Cost	1.017	2.165
e-tax system competence	-	2.144
Privacy	2.444	2.568
Service quality	1.919	2.243
Tax compliance	-	-
Taxpayers satisfaction	-	2.176

Source: Authors computation 2026

Construct	Tax compliance	Taxpayers satisfaction
Convenience	1.991	1.370
Cost	1.911	1.437
E-tax system competence	1.845	1.759
Privacy	1.074	1.967
Service quality	1.149	1.748
Tax compliance	1.871	1.849
Taxpayers satisfaction	1.774	1.516

Source: Authors computation 2026

5. CONCLUSION, LIMITATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This study focused on Nigerian taxpayers, specifically in Oyo State, and investigated the impact of e-tax system adoption on tax compliance, utilizing a sample of 361 respondents. The findings indicate that e-tax systems continue to enhance tax compliance and revenue generation, even amidst the ongoing global economic challenges posed by the pandemic. Notably, the research demonstrated that taxpayer satisfaction plays a significant mediating role in achieving higher compliance, and the proficiency of the e-tax system further strengthens the link between taxpayer satisfaction and tax compliance. Despite the impact of the COVID-19 outbreak, the government has experienced substantial revenue growth due to the implementation of the e-tax system, although the pandemic has generally posed challenges to global tax compliance due to physical and societal restrictions affecting business operations (Dwivedi et al., 2020). When considering the implementation of social media marketing in SMEs, the cost factor should be fully evaluated, even with the e-tax system being considered a cost-effective strategy.

Table 4: Path analysis result

Hypothesis	Relationship	Std. Beta	Std. error	T-value	P-value	f^2	R^2 (endogenous)	Decision
H_{1a}	CT→TC	0.062	—	3.742	0.000	0.215	0.951	Not supported
H_{1b}	SQ→TC	0.066	—	8.122**	0.000	1.294	0.951	Supported
H_{1c}	CV→TC	0.076	—	5.354**	0.000	0.411	0.951	Supported
H_{1d}	PR→TC	0.073	—	5.265**	0.000	0.369	0.951	Supported
H_{2a}	CT→TS	0.051	—	1.430	0.153	0.031	0.968	Not supported
H_{2b}	SQ→TS	0.051	—	3.962**	0.000	0.263	0.968	Supported
H_{2c}	CV→TS	0.061	—	3.276**	0.001	0.174	0.968	Supported
H_{2d}	PR→TS	0.067	—	3.186**	0.001	0.176	0.968	Supported
H_3	TS→TC	0.146	—	3.630**	0.000	0.197	0.951	Supported
H_{5a}	E-TSC→TS	0.200	—	6.694**	0.000	0.637	0.968	—
H_{5b}	E-TSC→TS	0.098	—	12.122***	0.000	2.635	0.968	—

Hypothesis	Indirect/Interaction	Indirect effect (β)	Std. error	Test statistic (or t)	P-value	Mediation type/ Interpretation	Decision
H_{4a}	CT→TS→TC (indirect)	0.044	0.063	—	0.950	Partial mediation	Supported
H_{4b}	SQ→TS→TC (indirect)	0.038	—	1.388	0.165	Full mediation	Supported
H_{4c}	CV→TS→TC (indirect)	0.038	—	0.462	0.644	Partial mediation	Supported
H_{4d}	PR→TS→TC (indirect)	—	—	—	—	Full mediation	Supported
Interaction	MOD_E-TSC * TS→TC (moderation)	0.078	0.011	4.662	0.007	Significant positive interaction	Supported

Source: Authors computation 2026. Significant at P**<0.01; *P* ***<0.05 ***- (not applicable)

Figure 5: Initial PLS Structural Model

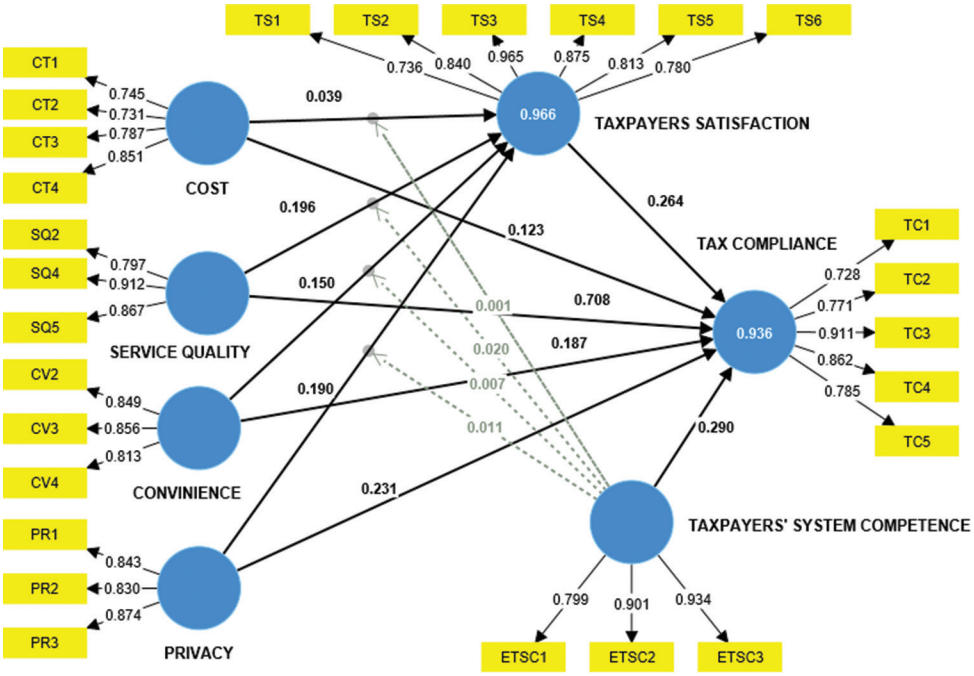
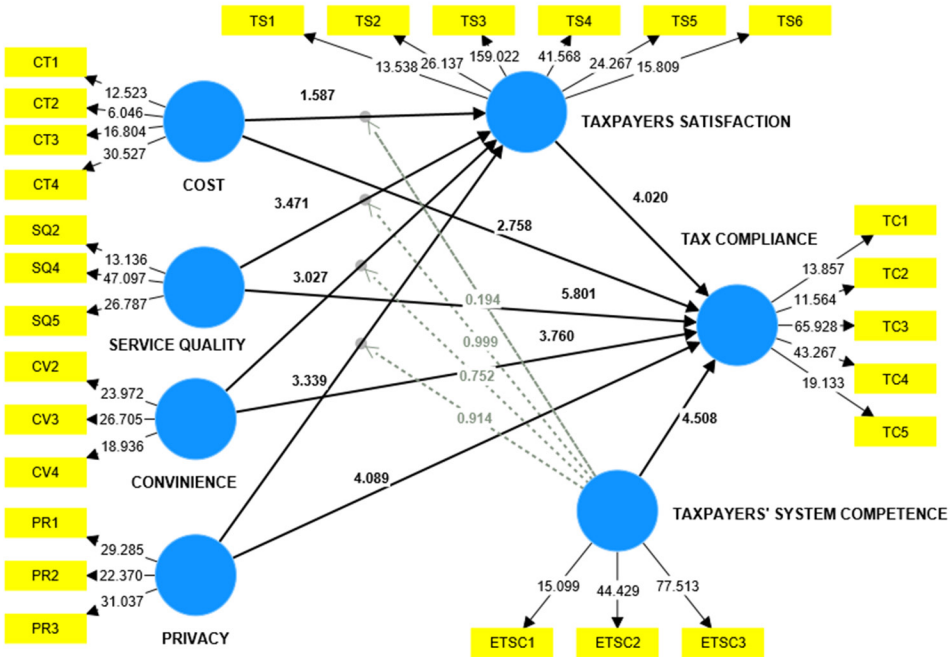


Figure 6: Revised PLS Structural Model showing t-test statistic



Consequently, many taxpayers believe they need to quickly grasp the technology to effectively use the e-tax system, requiring a full transition of promotional activities to this platform. The adoption of an e-tax system is expected to lower compliance costs, save time, enhance convenience, and improve data security for taxpayers. This adoption has positively and significantly impacted tax compliance, enabling taxpayers to improve return filing, interactions, and innovation through more frequent system use. Despite these contributions, the generalizability of the findings is limited by the sample size from Nigeria, suggesting the need for replication in both developed and developing countries. Additionally, the study's focus on e-tax system usage overlooks cultural and demographic variations in improving tax compliance, recommending that future research concentrate on these factors. To further scientific inquiry, the impact of the e-tax system on taxpayer satisfaction and tax compliance could be treated as a multidimensional construct.

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