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Information technology and tax administration in Cross River State, Nigeria: Empirical evidence from a quantitative study

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Abstract
Purpose: This study examined the effect of information technology on tax administration in Cross River State, Nigeria, with emphasis on tax processing time.
Methodology: The study adopted a quantitative survey design. Data were collected from 239 staff of the Cross River State Internal Revenue Service using structured questionnaires. Descriptive statistics and multiple regression analysis were employed using SPSS.
Results and Conclusion: The findings revealed that electronic tax registration, electronic tax assessment, and electronic tax filing significantly influenced tax processing time. Electronic tax payment and electronic tax audit showed positive but insignificant effects. The study concluded that digital tax administration improves efficiency and reduces delays when electronic systems are properly integrated and managed.
Implication of findings: The study recommends increased investment in digital infrastructure, taxpayer education, system integration, and staff training to strengthen electronic tax administration and improve public sector efficiency.

Keywords: information technology, tax administration, e-tax adoption, tax processing time, digital governance in Africa, Cross River State.

1. Introduction

Information technology has become a central component of modern tax administration across the world, transforming the ways in which revenue authorities register taxpayers, assess liabilities, process returns, collect payments, and conduct audits. Digital technologies such as automated data systems, online portals, and real-time analytics are reshaping how tax authorities improve efficiency and transparency in the tax system (He, 2024). These advancements, reflected in measures like electronic tax registration and electronic tax filing, are associated with streamlined processes that reduce manual bottlenecks and accelerate service delivery, influencing core outcomes such as tax processing time. The global shift toward e-tax systems is driven by the need for faster and more reliable tax operations, making the study of these technologies and their impacts on administrative performance an urgent area of inquiry in public finance research (He, 2024).

At a continental level, many African nations are increasingly adopting digital tax administration systems to address inefficiencies associated with traditional manual processes and to bolster tax compliance. Studies in West African contexts, for example, illustrate that digitalization of tax processes enhances voluntary compliance by simplifying access and convenience for taxpayers, which can indirectly contribute to reducing processing delays (Zubairu et al., 2025). The adoption of digital platforms for registration, assessment, and payment is therefore not only a technological upgrade but also a compliance tool, fostering faster interactions between taxpayers and revenue authorities. These developments underscore the importance of analyzing specific IT measures like electronic tax filing within the broader African tax policy environment.

Within Nigeria and other sub-Saharan states, research has shown that embracing digital tax systems can significantly mitigate challenges related to revenue collection and tax evasion, suggesting a potential positive effect on operational outcomes such as processing time. As tax authorities deploy e-registration, e-filing, and e-payment systems, the incentive for taxpayers to comply increases, which simultaneously influences the administrative workload and the pace of processing tasks. This contextual insight motivates investigations into how specific IT components affect administrative efficiency in state tax authorities, especially in contexts where manual systems have been the norm (Inegbedion, 2025).

Exploring the link between IT adoption and processing time at the state level, evidence from Nigeria points to significant improvements in revenue performance when electronic tax systems minimize human error and administrative delays, suggesting that digitalization can directly shorten tax processing time. Online deployment of registration, assessment, and payment platforms allows tax personnel to shift focus from repetitive clerical tasks toward compliance monitoring, which might reduce overall processing cycles. When considered alongside global trends, this motivates deeper empirical analysis of sub-components like e-auditing and its influence on processing time (Dagunduro et al., 2025).

The motivation for this study is rooted in the need to understand how distinct IT measures—such as electronic tax registration (ETREG) and electronic filing (ETFIL)—shape the efficiency of tax administration, especially measured by tax processing time. IF digital technologies can reduce the lag between tax filing and assessment, this could lead to enhanced taxpayer satisfaction and stronger compliance. Research indicates that digital transformation reduces information asymmetry between taxpayers and authorities, improving internal governance and potentially speeding up administrative processes (Han et al., 2025).

In spite of efforts to modernize tax systems, tax administration in Cross River State continues to face significant inefficiencies, with prolonged tax processing times undermining revenue mobilization, taxpayer compliance, and public trust. First, manual and fragmented tax processing frameworks lead to administrative delays, bottlenecks, and operational errors. Paper-based and legacy systems slow down registration, assessment, filing, and payment procedures, increasing administrative costs and frustrating taxpayers. Electronic tax registration systems (ETREG) address this challenge by enabling the digital capture, verification, and storage of taxpayer data, reducing the reliance on manual processes and accelerating the initial phase of tax administration. This ensures that subsequent processes such as assessment and payment can proceed efficiently, improving overall processing time and administrative accuracy (Inegbedion, 2025).

Second, low taxpayer compliance and high evasion rates are exacerbated by complex filing procedures and limited transparency. Many taxpayers find manual filing intimidating and prone to errors, which encourages underreporting and non-compliance. Research indicates that digital technology applications, including electronic tax filing (ETFIL), enhance transparency, reduce information asymmetry, and improve voluntary compliance by allowing taxpayers to submit returns online conveniently, with instant acknowledgment of receipt (Han et al., 2025). By simplifying submission and verification, e-filing reduces processing backlogs and ensures timely progression to assessment and payment stages.

Third, inefficient payment processing and revenue collection slow down the finalization of tax obligations. Manual payment methods involve time-consuming reconciliation and verification, creating delays in the availability of funds for public services. Electronic tax payment systems (ETPAY) enable real-time fund transfers, automated reconciliation, and immediate confirmation of payments, minimizing administrative effort and errors. These platforms accelerate revenue inflow and ensure that

collected taxes are accurately reflected in official records, strengthening operational efficiency and fiscal reliability (Usman & Okoroigwe, 2025).

Fourth, poor data quality and limited auditing capacity hinder effective monitoring of compliance and detection of anomalies. Manual record-keeping prevents tax authorities from analyzing large datasets efficiently, delaying audits and compliance enforcement. Electronic tax auditing (ETAUD) systems leverage analytics and automated tools to quickly identify discrepancies, flag irregularities, and support continuous monitoring. Automated auditing reduces labor-intensive manual review, increases detection of non-compliance, and contributes to faster completion of tax processing cycles.

Fifth, the lack of integration across IT components and resistance to digital adoption constrains the potential efficiency gains of electronic tax systems. Even where digital platforms exist, poor interoperability between modules and limited digital literacy among taxpayers restrict the realization of full benefits. Seamless integration of ETREG, ETASS, ETFIL, ETPAY, and ETAUD, combined with stakeholder training and capacity-building, can foster higher adoption rates, reduce redundancy, and enhance overall administrative performance, thereby reducing tax processing time (Inegbedion, 2025; Han et al., 2025).

Despite these improvements, several research gaps remain. A methodological gap exists because few studies employ rigorous empirical designs to isolate the effects of individual IT sub-components on tax processing efficiency. A theoretical gap persists, as most frameworks do not integrate digital transformation perspectives with public administration and compliance behavior theories, limiting explanatory power. Conceptually, many studies treat IT adoption as a single construct rather than disaggregating it into registration, assessment, filing, payment, and auditing elements, creating a conceptual gap. Finally, an empirical gap exists in context-specific evidence for Cross River State, particularly on the interactive and cumulative effects of IT adoption on administrative outcomes. Addressing these gaps will provide robust, actionable insights to guide policy, implementation, and optimization of electronic tax systems in the state.

The broad objective of this study is to explore the effect of information technology on tax administration in Cross River State.

2. Literature review

Electronic Tax Registration and Tax Processing Time

Electronic tax registration refers to the digital process of capturing, verifying, and storing taxpayer information through online platforms to simplify taxpayer enrollment and reduce manual procedures. It enhances accessibility, reduces administrative bottlenecks, and improves the efficiency of tax administration processes.

Afriani et al. (2023) examined the role of information technology in promoting orderly financial administration and tax compliance among startup businesses in Indonesia. Using a quantitative survey design and Partial Least Squares analysis, the study found that digital tax systems, particularly electronic registration and filing, improved administrative order and enhanced tax compliance.

Olumoh and Sanni (2025) investigated the effect of information technology adoption on operational performance in Osun State Internal Revenue Service, Nigeria. Using Structural Equation Modeling, the findings revealed that electronic tax systems improved efficiency, reduced administrative delays, and strengthened tax administration performance.

Inegbedion (2025) studied the acceptance of electronic tax systems among SMEs and their contribution to tax revenue in Nigeria. The study found that electronic registration systems significantly improved taxpayer participation and reduced bottlenecks associated with manual registration procedures.

Astuti and Ayinde (2025) explored factors influencing digital technology adoption across Sub-Saharan Africa using panel regression analysis. The study established that infrastructure quality and digital accessibility significantly influence the adoption of electronic systems, including digital tax registration platforms.

Zubairu et al. (2025) examined the impact of digitalization on tax compliance in Ghana using Structural Equation Modeling. The findings showed that digital tax systems enhanced compliance and administrative efficiency through simplified registration and taxpayer interaction processes.

Electronic Tax Assessment and Tax Processing Time

Electronic tax assessment is the use of digital systems and automated platforms to determine tax liabilities and process taxpayer information electronically. It improves accuracy, reduces human errors, and accelerates the assessment process within tax administration.

Bassey et al. (2022) conducted a systematic review on digital tax administration and found that electronic tax assessment systems improve administrative efficiency by automating tax computations and reducing human errors in tax administration processes.

Saptono et al. (2023) investigated the quality of e-tax systems and tax compliance intention in Indonesia using survey analysis. The findings revealed that efficient electronic assessment platforms improve taxpayer satisfaction and simplify tax processing activities.

Zahra et al. (2023) examined electronic tax systems in relation to VAT reporting and found that digital tax assessment tools improve the accuracy and speed of determining tax liabilities within online tax systems.

Olumoh and Sanni (2025) reported that automated tax assessment systems significantly improve operational performance and reduce delays in state tax administration in Nigeria.

He and Yi (2023) studied the digitalization of tax administration and corporate performance in China. The findings revealed that digital assessment systems improve administrative efficiency, transparency, and tax processing outcomes.

Electronic Tax Filing and Tax Processing Time

Electronic tax filing refers to the online submission of tax returns through internet-enabled platforms instead of manual paper-based filing. It simplifies compliance procedures, improves convenience for taxpayers, and reduces the time required for tax processing.

Salawu et al. (2025) investigated the effect of electronic tax filing systems on SMEs' compliance in Lagos State, Nigeria. Using ordinal logit regression, the study found that electronic filing significantly improves compliance and simplifies tax processing procedures.

Okunogbe and Pouliquen (2022) examined the impact of electronic tax filing on taxpayers and found that e-filing reduced the time spent on tax compliance activities by approximately 40 percent.

Ariyanto et al. (2024) studied determinants of tax compliance among MSMEs and found that electronic filing systems improve taxpayer convenience, satisfaction, and willingness to comply with tax obligations.

Ramdhony et al. (2023) analyzed the determinants of continuance intention toward electronic tax filing services. The findings showed that perceived usefulness, ease of use, and service quality significantly influence sustained use of e-filing systems.

Saptono et al. (2023) found that electronic filing services improve user satisfaction and tax compliance intentions through enhanced service quality and reduced compliance burdens.

Electronic Tax Payment and Tax Processing Time

Electronic tax payment involves the settlement of tax obligations through authorized digital payment channels such as online banking, mobile transfers, and e-billing systems. It facilitates faster payment confirmation, minimizes manual reconciliation, and enhances transparency in revenue collection.

Christi et al. (2025) examined the implementation of an electronic tax receipt (e-billing) system in Indonesia using qualitative methods. The findings showed that e-payment systems improved efficiency, transparency, and taxpayer confidence in tax administration.

Purwanto and Mantika (2023) assessed the effectiveness of electronic billing systems in tax payment administration. The study found that e-billing significantly reduced delays associated with manual payment verification and reconciliation.

Nguyen et al. (2025) investigated factors influencing the acceptance of online tax filing and payment systems among SMEs in Vietnam. The findings indicated that electronic payment systems reduced transaction costs and improved tax compliance efficiency.

Tinta et al. (2024) examined electronic tax services and compliance among businesses in Burkina Faso. The study established that electronic payment systems provided faster and more secure tax payment processes, thereby improving administrative efficiency.

Miraji et al. (2025) studied awareness and adoption of e-tax payment systems among SMEs in Tanzania. The findings showed that increased awareness and taxpayer education positively influenced the adoption of electronic tax payment platforms.

Electronic Tax Auditing and Tax Processing Time

Electronic tax auditing is the application of digital tools, automated checks, and data analytics in reviewing taxpayer records and detecting irregularities. It improves compliance monitoring, reduces manual audit workload, and strengthens the efficiency of tax administration.

Bellon et al. (2022) examined the effect of VAT e-invoicing on tax compliance in Peru. The findings revealed that electronic auditing and monitoring systems improved compliance enforcement and reduced tax evasion.

Kotsogiannis et al. (2025) investigated the effect of e-invoicing on VAT audits in Rwanda. The study found that electronic auditing systems improved audit efficiency and increased the accuracy of identifying tax liabilities.

Stergiou and Karagiorgos (2024) explored the relationship between digital transformation and tax compliance in Greece. The findings showed that electronic auditing systems improved compliance monitoring and made audits more targeted and efficient.

Costea et al. (2025) studied digital tax control systems in Romania and found that electronic auditing enhanced access to taxpayer information and improved the speed of audit procedures through automated data comparison.

OECD (2025) reported that modern tax administration increasingly relies on electronic checks, automated validations, and digital audit systems to improve compliance monitoring and reduce delays in tax administration processes.

Ho_1: There is no significant effect of electronic tax registration on tax processing time in Cross River State.

Ho_2: There is no significant effect of electronic tax assessment on tax processing time in Cross River State.

Ho_3: There is no significant effect of electronic tax filing on tax processing time in Cross River State.

Ho_4: There is no significant effect of electronic tax payment on tax processing time in Cross River State.

Ho_5: There is no significant of electronic tax audit on tax processing time in Cross River State.

Theoretical Framework

Technology acceptance model (TAM)

Fred D. Davis first proposed the Technology Acceptance Model (TAM) in 1989 as a theoretical framework to explain and predict how users come to accept and use technology, specifically in the context of information systems and computing environments (Davis, 1989). The foundational article, Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology published in Management Information System (MIS) Quarterly, articulates the model's core constructs—perceived usefulness and perceived ease of use—as primary determinants of technology acceptance and subsequent behavioural intention to use the system (Davis, 1989). TAM is grounded in the earlier Theory of Reasoned Action (TRA) but differs by focusing specifically on system-related beliefs as precursors to behavioural intention, thereby offering a parsimonious yet powerful predictive model for technology use behaviour (Davis et al., 1989).

In the context of the current study, which seeks to examine user behaviour or adoption of a specific technology or information system, TAM justifies the investigation by providing a theoretical lens that connects user perceptions to behavioural intentions, thereby grounding empirical measures in established theory. Because this study examines how individual beliefs about the usefulness and ease of use of a technology influence their intention and actual use, TAM offers a validated framework for hypothesizing relationships among these constructs (Davis, 1989). The model's relevance to diverse technology adoption settings underscores its applicability and supports its use as the theoretical foundation for examining acceptance determinants in the present research."

Resource-based view (RBV) theory

The Resource-Based View (RBV), initially articulated by Wernerfelt 1984 and later substantially developed by Barney in 1991, provides a framework for understanding how organizations achieve and sustain competitive advantage through the strategic deployment of valuable, rare, inimitable, and non-substitutable resources (Wernerfelt, 1984; Barney, 1991). The theory assumes that organizations possess heterogeneous bundles of resources and capabilities and that these internal endowments, more than external market conditions alone, are central to explaining long-run performance differences. From this perspective, both tangible and intangible assets, including technological infrastructure, human capital, organizational routines, and knowledge systems, can become strategic resources when they are effectively combined and difficult for rivals to replicate.

Applied to the present study, RBV provides a strong theoretical basis for examining electronic tax registration, assessment, filing, payment, and auditing as internal technological resources within Cross River State tax administration. When these tools are effectively integrated into administrative workflows,

they can enhance operational efficiency, improve service delivery, strengthen institutional capacity, and support better performance outcomes. Accordingly, RBV justifies the argument that internal digital capabilities are central to explaining variations in tax administration effectiveness and provides a suitable lens for evaluating the relationship between e-tax adoption and tax processing efficiency.

3. Methodology

The study adopted a survey research design because the variables required respondents to provide information through structured questionnaires. The population of the study consisted of management staff of the Cross River State Internal Revenue Service, as obtained from the nominal roll supplied by the Office of the Accountant-General of Cross River State. The total population for the study was 265 staff members. The study adopted the census sampling technique in which the entire population was used as the sample size because the population was considered manageable and accessible for the study.

The study relied mainly on primary data collected through the administration of questionnaires to the management staff of the Cross River State Internal Revenue Service. A total of 265 questionnaires were distributed, out of which 239 were properly completed and returned, representing the responses used for the analysis. Descriptive and inferential statistical techniques were employed for data analysis. Descriptive statistics such as mean, standard deviation, frequency distribution, and percentage analysis were used to summarize the data and explain the characteristics of the variables. Multiple regression analysis was also employed to examine the effect of information technology variables on tax administration in Cross River State. The hypotheses of the study were tested using the Statistical Package for Social Sciences (SPSS).

The validity of the instrument was established through expert review, where specialists in the field examined the questionnaire to ensure that it measured the intended constructs accurately. Reliability was tested using Cronbach's Alpha to determine the consistency of the instrument. The generally accepted reliability threshold of 0.70 was adopted, and all the study variables satisfied the reliability requirement, confirming that the instrument was suitable for the study.

Model specification

The model specification for the study is as stated below:

$$TAXPT = \beta_0 + \beta_1 ETREG + \beta_2 ETASS + \beta_3 ETFIL + \beta_4 ETPAY + \beta_5 ETAUD + \mu$$

Where:

TAXPT = Tax processing time

ETREG = Electronic registration

ETASS = Electronic assessment

ETFIL = Electronic filing

ETPAY = Electronic payment

ETAUD = Electronic auditing

β_0 is the intercept term, and β_1, β_2, β_3, β_4, β_5, are the coefficients estimated.

μ is the error term

4. Results and discussion

TABLE 1: Descriptive statistics

Variable	Mean	Std. Deviation	N
TAXPT	13.65	1.073	239
ETREG	14.26	0.734	239
ETASS	13.95	1.064	239
ETFIL	13.39	0.919	239
ETPAY	13.87	1.41	239
ETAUD	12.99	1.818	239

Source: researcher's compilation, 2026

The descriptive statistics in table 1 depict that virtually all the explanatory variables record high mean values, with values ranging from 12.99 to 14.26 across the 239 responses, suggesting that respondents generally perceived the dimensions of electronic tax administration and tax-related outcomes at a moderately high level. Specifically, ETREG had the highest mean (M = 14.26, SD = 0.734), indicating that electronic tax registration was the most strongly rated and also the most consistently perceived dimension among respondents, as reflected in its low standard deviation. This was followed by ETASS (M = 13.95, SD = 1.064), ETPAY (M = 13.87, SD = 1.410), TAXPT (M = 13.65, SD = 1.073), and ETFIL (M = 13.39, SD = 0.919), all of which suggest fairly positive assessments with moderate variability. ETAUD recorded the lowest mean (M = 12.99, SD = 1.818), implying that electronic tax audit was the least favorably perceived and the most dispersed in responses, which indicates greater differences in respondents' experiences or opinions regarding this dimension. The implication for the study is that while respondents generally acknowledged the presence and relevance of electronic tax administration components, some aspects, particularly electronic audit, may not be as effective, accessible, or uniformly experienced as others. This suggests that the study should pay closer attention to the weaker dimensions, since disparities in their performance may influence the overall effectiveness of tax administration and its contribution to the dependent variable under investigation.

TABLE 2: Regression Coefficients

Variable	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
Constant	14.546	2.245		6.48	< .001		
ETREG	0.337	0.1	0.231	3.362	0.001	0.784	1.275
ETASS	-0.317	0.074	-0.314	-4.257	< .001	0.681	1.469
ETFIL	-0.218	0.096	-0.187	-2.274	0.024	0.548	1.825
ETPAY	0.076	0.06	0.099	1.259	0.209	0.596	1.679
ETAUD	0.045	0.048	0.076	0.942	0.347	0.566	1.768

Source: researcher's compilation, 2026

Test of hypotheses

Hypothesis one

Ho_1: There is no significant effect of electronic tax registration on tax processing time in Cross River State.

H_{A1}: There is a significant effect of electronic tax registration on tax processing time in Cross River State.

Test statistics: multiple linear regression analysis.

Decision criteria: Accept the alternate hypothesis if ($p<0.05$) and reject the null hypothesis, if otherwise.

Now, from table 5, of 4.1, data presentation, electronic tax registration shows a p-value of 0.001, meaning that it is less than the decision p-value of 0.005. On this premise, the null hypothesis is rejected and the alternate hypothesis accepted.

Hypothesis two

Ho_2: There is no significant effect of electronic tax assessment on tax processing time in Cross River State.

H_{A2}: There is a significant effect of electronic tax assessment on tax processing time in Cross River State.

Test statistics: multiple linear regression analysis.

Decision criteria: Accept the alternate hypothesis if ($p<0.05$) and reject the null hypothesis, if otherwise.

Taking a cursory look at table 5, of 4.1, data presentation, electronic tax assessment shows a p-value of 0.001, meaning that it is less than the decision p-value of 0.005. On this premise, the null hypothesis is rejected and the alternate hypothesis accepted.

Hypothesis three

Ho_3: There is no significant effect of electronic tax filing on tax processing time in Cross River State.

H_{A3}: There is a significant effect of electronic tax filing on tax processing time in Cross River State.

Test statistics: multiple linear regression analysis.

Decision criteria: Accept the alternate hypothesis if ($p<0.05$) and reject the null hypothesis, if otherwise.

A careful look at table 5, of 4.1, data presentation, electronic tax filing shows a p-value of 0.024, meaning that it is less than the decision p-value of 0.005. On this premise, the null hypothesis is rejected and the alternate hypothesis accepted.

Hypothesis four

Ho_4: There is no significant effect of electronic tax payment on tax processing time in Cross River State.

H_{A4}: There is a significant effect of electronic tax payment on tax processing time in Cross River State.

Test statistics: multiple linear regression analysis.

Decision criteria: Accept the alternate hypothesis if ($p<0.05$) and reject the null hypothesis, if otherwise.

A careful look at table 5, of 4.1, data presentation, electronic tax payment shows a p-value of 0.209, meaning that it is greater than the decision p-value of 0.005. On this premise, the null hypothesis is accepted and the alternate hypothesis rejected.

Hypothesis five

Ho_5: There is no significant effect of electronic tax audit on tax processing time in Cross River State.

H_{A5}: There is a significant effect of electronic tax audit on tax processing time in Cross River State.

Test statistics: multiple linear regression analysis.

Decision criteria: Accept the alternate hypothesis if ($p<0.05$) and reject the null hypothesis, if otherwise.

A critical study of table 5, of 4.1, data presentation, electronic tax audit shows a p-value of 0.347, meaning that it is greater than the decision p-value of 0.005. On this premise, the null hypothesis is accepted and the alternate hypothesis rejected.

5. Conclusion

The study concludes that information technology significantly influences tax administration in Cross River State, particularly in relation to tax processing time, thereby achieving the objective of examining the effect of electronic tax systems on tax administration efficiency. The findings revealed that electronic tax registration positively and significantly improves tax processing time by enhancing taxpayer enrollment and identification processes. Similarly, electronic tax assessment and electronic tax filing were found to significantly reduce tax processing time, indicating that automated assessment and filing systems are important drivers of administrative efficiency and reduced operational delays. However, electronic tax payment and electronic tax audit showed positive but insignificant effects, suggesting that their contributions to tax processing efficiency remain limited due to infrastructural deficiencies, implementation challenges, and low adoption levels.

The findings support the Technology Acceptance Model (TAM), which explains that the usefulness and ease of digital systems influence their adoption and effectiveness in organizational processes. The study also aligns with the Resource-Based View (RBV) theory, which emphasizes that technological resources and digital capabilities can improve institutional performance when effectively integrated and managed. Consequently, the study concludes that the adoption of information technology can strengthen tax administration efficiency in Cross River State when electronic tax systems are fully integrated, accessible, and properly utilized.

Practically, the study implies that policymakers and tax authorities should prioritize investments in digital infrastructure, staff training, taxpayer sensitization, and system integration to maximize the benefits of electronic tax administration. Strengthening these areas will improve operational efficiency, reduce processing delays, enhance taxpayer compliance, and support sustainable revenue generation in Cross River State.

Recommendations

1. Based on the finding that electronic tax registration has a positive and significant effect on tax processing time in Cross River State, the study recommends that the tax authority should strengthen and fully optimize the electronic tax registration system to improve the speed and accuracy of taxpayer enrollment. This can be achieved by redesigning the registration portal to make it more user-friendly, integrating it with national identity and business registration databases for automatic verification, and providing regular staff training and taxpayer sensitization programmes to encourage effective adoption.

2. In response to the finding that electronic tax assessment has a negative and significant effect on tax processing time, indicating that it reduces processing delays, the study recommends that the government should expand and improve the use of electronic tax assessment systems. This can be implemented through the deployment of automated assessment tools, integration of assessment platforms with taxpayer databases for real-time access, and continuous technical training for tax officials to ensure effective system management and faster tax processing.

3. Based on the finding that electronic tax filing has a negative and significant effect on tax processing time, showing that e-filing contributes to faster tax administration, the study recommends that the tax authority should intensify the adoption of electronic filing systems. The filing platform should be simplified and made accessible through computers and mobile devices, while taxpayer education programmes, online support services, and automatic error-detection features should be introduced to improve compliance and reduce filing mistakes.

4. Considering the finding that electronic tax payment has a positive but insignificant effect on tax processing time, the study recommends that the tax authority should improve the reliability and integration of the electronic payment system to strengthen its contribution to administrative efficiency. This can be achieved by collaborating with banks and fintech providers for seamless real-time payment confirmation, introducing multiple payment channels such as USSD and mobile banking, and establishing rapid complaint-resolution mechanisms to address failed transactions promptly.

In view of the finding that electronic tax audit has a positive but insignificant effect on tax processing time, the study recommends that the tax authority should strengthen the operational capacity of electronic audit systems to improve their effectiveness in tax administration. This should involve investing in digital audit software, developing centralized taxpayer databases, and training tax officers in data analytics and electronic compliance monitoring to ensure more efficient and targeted audit processes.

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