**INFORMATION TECHNOLOGY INVESTMENT AND TAX COMPLIANCE IN NIGERIAN INFORMAL SECTOR**

**ABSTRACT**

In an era marked by increasing globalization and heightened fiscal scrutiny, tax compliance has emerged as a critical area of concern for governments, businesses, and individuals worldwide. This study assessed the effect of information technology investment on tax compliance of Nigerian informal sector in Ekiti State. This study adopted survey research and population of the study comprised 1,440,771 registered MSMEs in Ekiti State as of 31st December 2023 (SMEDAN,2023). A sample size of 400 respondents was selected using Taro Yamane’s formula. Data was collected through a well-structured questionnaire and analysed with descriptive and inferential analysis. The empirical analysis showed that electronic tax platform investment had positive and significant effect on tax compliance among the Nigerian informal sector. On the other hand, computer software investment had positive and insignificant effect on tax compliance. Finally, the study concludes that investment in digital tax platforms have contributed to diminishing tax processing time and its user-friendly nature has improved compliance of taxpayers in the informal sector of Ekiti state. Also, when considering form of capital investment that can improve tax compliance, computer software investment is not significant. Based on the study's conclusions and findings, it is recommended that business owners should not embrace investment in computer software investment for tax purpose because it is inadequate and the cost can discourage tax compliance, and taxpayers should be encouraged to improve on their computer literacy so they can easily file their taxes and submit their files with ease and convenience in order to boost their tax compliance.

**Keywords:** Information technology investment; Computer software investment; Digital platform investment; Tax compliance

**JEL CODES:** H20; H25; H26

**1. INTRODUCTION**

In an era marked by increasing globalization and heightened fiscal scrutiny, tax compliance has emerged as a critical area of concern for governments, businesses, and individuals worldwide (Dagunduro et al., 2025). While the imperatives of tax compliance resonate universally, the dynamics at play vary significantly across different geographic regions, reflecting the interplay of contextual factors such as institutional frameworks, cultural norms, and historical legacies (Andriani & Tarmidi, 2024; Ige et al., 2023). Tax compliance is influenced by various factors, including taxpayer attitudes, perceptions of fairness, enforcement measures, and the complexity of tax systems (Falana et al., 2024). The willingness of taxpayers to comply with tax laws is shaped by their trust in government institutions, perceptions of the effectiveness of tax administration, and beliefs about the fairness of the tax system (Adelekan et al., 2024; Akinadewo et al., 2023).

In Africa, a continent characterized by vast socio-economic disparities, weak institutional capacities, and pervasive informal sectors, achieving optimal levels of tax compliance represents a formidable policy imperative for governments grappling with resource mobilization and public service delivery (Ayeni & Ogbeta, 2022; Aluko et al., 2022). The Nigerian informal sector, characterized by its dynamism, diversity, and resilience, occupies a central position in the nation's socio-economic landscape (Adekoya et al., 2022; Adewara et al., 2023). Abdulrasaq and Babatunde (2024) opined that despite contributions of informal sector to employment generation, income generation, and poverty alleviation, the informal sector has long remained a blind spot in the country's tax regime. The challenges of taxing this segment of the economy is manifold, ranging from the elusive nature of informal activities to the prevalence of cash-based transactions and limited visibility into business operations (Ali et al., 2024; Ashafoke & Obaretin, 2023).

Amidst these changes and challenges, the issue of tax compliance has assumed unprecedented significance, posing formidable challenges for governments seeking to mobilize revenue, combat illicit financial flows, and promote socio-economic development (Dakhil et al., 2025; Mascagni et al., 2021). Information technology (IT) emerges as a potent tool with the potential to transform the landscape of tax compliance in the Nigerian informal sector (Dagunduro et al., 2025). Rapid advancements in digital technologies, coupled with increasing internet penetration, digital platforms, electronic billing, electronic filing, and the widespread use of mobile phones, have opened remarkable avenues for revolutionizing tax administration and ensuring compliance (Falana et al., 2023; Nsangu & Haabazoka, 2024). These systems have simplified tax administration procedures, facilitating taxpayers in meeting their obligations while enabling tax authorities to oversee compliance more effectively. Tackling tax compliance concerns within the informal sector demands innovative strategies that account for the distinct features and obstacles encountered by informal enterprises (Adekoya et al., 2022; Bruce-Twum, 2023; Rusdi et al., 2023). By leveraging IT solutions, tax authorities can enhance their capacity to identify, register, and monitor informal sector businesses, thereby expanding the tax base and improving revenue collection efficiency.

The integration of information technology (IT) into business operations, including tax compliance, has been extensively studied, especially within formal sector enterprises. Paojan et al. (2023) found that the implementation of electronic tax systems and digital accounting software has been found to reduce the incidence of tax evasion and increase tax revenues. Rusdi et al. (2023) opined that limited access to technology, lack of digital literacy, and informal business practices poses barriers to the adoption of IT solutions for tax compliance. Ogunleye and Adesina (2023) evaluated how investments in tax software impact tax compliance among SMEs in Nigeria. The study found a positive correlation between tax software investment and improved tax compliance, highlighting that software tools enhance accuracy and reduce errors in tax reporting. Similarly, Ouyang et al. (2023) found that advanced tax software significantly boosts compliance rates among individual taxpayers in Taiwan by simplifying tax filing and providing real-time support. Smith and Lee (2023) supported these findings through a longitudinal study in the UK, demonstrating that tax compliance software improves accuracy and timeliness of tax submissions.

While Paojan et al. (2023) highlighted the general effectiveness of electronic tax systems and digital accounting software in reducing tax evasion and increasing revenues, and Rusdi et al. (2023) identified barriers such as limited access to technology and lack of digital literacy, there is a lack of specific focus on the informal sector in Nigeria. Ogunleye and Adesina (2023) and Ouyang et al. (2023) examined the impact of tax software on SMEs and individual taxpayers, respectively, but did not address the unique challenges faced by the informal sector. Smith and Lee (2023) reinforced the benefits of tax compliance software in developed contexts. This study seeks to explore how IT investments specifically influence tax compliance within Nigeria's informal sector, considering its distinct characteristics and the unique obstacles it faces, thereby providing targeted insights and practical recommendations for improving tax compliance in this crucial segment of the economy.

This study contributes to how IT tools simplify tax administration, making it easier for taxpayers to comply and enabling tax authorities to oversee compliance more effectively, potentially reducing tax evasion and increasing revenues. The findings and recommendations from this study serve as a model for other developing countries with similar informal sector taxation challenges, providing a framework that can be adapted to different contexts to promote better tax compliance and revenue generation globally. The remainder of this paper is structured as follows: Section 2 provides an overview of the conceptual framework underlying the effect of IT investment on tax compliance and review of relevant literature on IT adoption and tax compliance in developing countries, with a focus on Nigeria. Section 3 discusses the methodological approaches employed in this study and section 4 highlights key results and discussion of findings. Finally, Section 5 offers conclusions, recommendations and identifies avenues for future research.

**2. LITERATURE REVIEW**

This section provides literature evidence and theoretical foundation for the study.

**2.1 Conceptual Review**

This section provides definitions for the concepts and variables used in this study to ensure easier understanding and clarity.

**2.1.1 Tax Compliance**

Paojan et al. (2023) defined tax compliance as the adherence to tax laws and regulations by accurately reporting income, expenses, and other financial details to the relevant tax authorities. This includes timely submission of tax returns and correct payment of taxes due. Alm (2019) categorized tax compliance into voluntary compliance, where taxpayers willingly follow tax laws, and enforced compliance, which is driven by the threat of legal consequences and audits. Governments use strategies like simplifying tax laws, enhancing taxpayer services, and improving the fairness and transparency of the tax system to boost compliance. Similarly, Lawal et al. (2024) defined tax compliance as the voluntary adherence of taxpayers to tax regulations and procedures, a definition also supported by Adekoya et al. (2022). Indicators of tax compliance include timely submission and accurate reporting of tax returns.

Several factors impact tax compliance, such as economic conditions, the complexity of tax laws, enforcement measures, and perceptions of fairness in the tax system. Research shows that both intrinsic and extrinsic motivations influence tax compliance. Intrinsic motivations involve personal morals and ethics, while extrinsic motivations include fear of audits, penalties, and legal consequences (Abdulrasaq & Babatunde, 2024). In the context of this study, tax compliance is the act of adhering to tax laws and regulations by accurately reporting income, expenses, and other financial information, and paying the taxes owed in a timely manner. It involves both voluntary actions, where taxpayers willingly follow tax rules, and enforced actions, where compliance is driven by the threat of audits and penalties.

**2.1.2 Information Technology Investment**

Afriani et al. (2003) defined information technology investment as the allocation of financial resources for acquiring, maintaining, and upgrading technology infrastructure, such as hardware, software, and network systems. This broad definition captures the essential aspects of IT investment, including purchasing servers, computers, networking equipment, and cloud services. It underscores the importance of maintaining and enhancing technology infrastructure to support organizational operations. Edwards and James (2018) expand on this by emphasizing the development, implementation, and integration of IT systems and applications. They highlight that IT investment involves spending on systems like ERP and CRM, which are crucial for improving business processes and driving innovation. This definition adds depth by focusing on how IT investments are applied to enhance business functions and increase efficiency. Hendayana et al. (2021) further elaborate on IT investment by including the funding for recruiting, training, and retaining IT professionals. Nsangu and Haabazoka (2024) provide a more specific perspective, describing IT investment as projects aimed at developing, modernizing, or maintaining IT assets and their operation within a production environment. This definition highlights the practical application and operational impact of IT investments, emphasizing their role in enhancing organizational performance.

Studies show that strategic investments in information technology (IT) can lead to increased productivity, enhanced decision-making, and competitive advantages (Ayeni & Ogbeta, 2022). However, the effectiveness of these investments’ hinges on factors such as alignment with business goals, the organization's capacity for technology integration, and the robustness of the IT governance framework (Ali et al., 2024). IT investments can significantly boost organizational efficiency and effectiveness by automating processes, improving decision-making through data analytics, and facilitating communication and collaboration (Ashafoke & Obaretin, 2023). The benefits derived from IT investments are often linked to how well these technologies align with strategic goals and existing systems (Bellon et al., 2022). Successful IT investments require careful planning and evaluation, including assessing potential return on investment (ROI), understanding the total cost of ownership (TCO), and managing associated risks (Asomba et al., 2023).

Information technology investment in the context of this study refers to the allocation of financial and technical resources towards acquiring, implementing, and maintaining IT systems and tools that enhance the efficiency, accuracy, and effectiveness of tax compliance processes. This includes investments in computer software and electronic tax platforms. By investing in these IT resources, organizations aim to improve the accuracy and timeliness of tax compliance, minimize errors and penalties, and enhance overall efficiency in managing tax obligations. These investments include computer software investment and electronic tax platforms.

**2.1.2.1 Computer Software Investment**

Smith and Johnson (2021) define computer software investment as the financial allocation towards purchasing and licensing software applications and systems crucial for business operations. This definition highlights the importance of acquiring various types of software, such as enterprise systems and productivity tools, to enhance organizational capabilities and efficiency. This perspective underscores the strategic role of software acquisition in supporting and improving business functions. Brown and Lee (2022) offer a different angle by focusing on the investment in developing custom software solutions. This definition emphasizes the financial commitment required for creating tailored software to address specific business needs, including the costs of development, design, and testing. This approach acknowledges the necessity of investing in bespoke solutions that align with unique operational requirements, which can offer competitive advantages. Wilson and Clark (2020) extend the concept by including expenditures related to upgrading and maintaining existing software. Their definition highlights the ongoing costs associated with ensuring that software remains effective and up to date through regular updates and maintenance. This perspective is crucial for understanding how continuous investment in software upkeep contributes to sustaining its value and performance over time.

Chillapalli (2022) introduce another dimension by defining software investment as subscribing to Software as a Service (SaaS) platforms. This model emphasizes the financial commitment to cloud-based software solutions, which provide flexibility and scalability while minimizing the need for in-house infrastructure and maintenance. Their definition reflects the growing trend of utilizing SaaS for its cost-effectiveness and adaptability. In this study, computer software investment denotes the allocation of financial resources for the acquisition, development, and upkeep of software systems that enable precise and efficient management of tax-related activities. This encompasses investments in specialized software that automates the preparation, submission, and monitoring of tax returns, thereby ensuring compliance with tax regulations and minimizing error risks. Additionally, it includes investments in software that aids in managing and analyzing financial data for tax calculations, audits, and reporting, thereby enhancing accuracy and decision-making in tax planning.

**2.1.2. Electronic Tax Platforms Investment**

Jones (2021) defines electronic tax platforms investment as digital systems that facilitate the electronic handling of tax documents and payments, emphasizing their role in improving efficiency and reducing paperwork. This definition captures the fundamental purpose of these platforms: to streamline tax compliance processes and facilitate online interactions between taxpayers and tax authorities. Smith and Brown (2022) further elaborate on the features of these platforms, noting that they include automated calculations, error-checking, and real-time updates. This definition underscores the technical aspects and user benefits of electronic tax platforms, such as enhanced accuracy and timely information. Lee et al. (2023) describes electronic tax platforms as integrated software solutions designed to improve tax administration efficiency. They highlight the digital interface for interactions between taxpayers and authorities, which supports functions like tax return submission and digital payments. This definition emphasizes the integration of various tax-related functions into a cohesive system, enhancing overall administrative efficiency.

Roger (2021) described electronic tax platforms investment as systems used to manage and process tax activities, including filing, payments, and audits. Their definition points to the platforms' role in improving accuracy, reducing processing time, and enhancing the taxpayer experience, reflecting their practical implications for tax administration. In this study, electronic tax platforms describe as digital systems and web-based applications designed to facilitate and streamline the tax compliance process by allowing taxpayers and tax authorities to manage and interact with tax-related activities online. These platforms enable users to electronically file tax returns, make payments, and track their tax status, thereby simplifying compliance with tax laws and regulations. They typically offer features such as automated tax calculations, real-time updates on tax obligations, error-checking mechanisms, and secure communication channels between taxpayers and authorities. By integrating these functions into a cohesive digital interface, electronic tax platforms enhance the accuracy, efficiency, and transparency of tax compliance efforts, reducing the need for manual paperwork and minimizing the risk of errors and delays.

**2.2 Theoretical Review**

This study reviewed Tax Benefit Theory and underpinned this study.

**2.2.1 Tax Benefit Theory**

Tax Benefit Theory, introduced by Martin Allingham and Agnar Sandmo in their 1972 paper, posits that individuals’ adherence to tax regulations is influenced by their perception of the benefits received from paying taxes (Allingham & Sandmo, 1972). The theory asserts that people assess the advantages of tax compliance such as access to public goods and services against the costs of compliance, including fines and legal risks (Andreoni et al., 1998). In contexts like Nigeria's informal sector, where access to public services may be limited, the perceived benefits of paying taxes are crucial for influencing compliance (Ige et al., 2023). Information Technology (IT) investments can significantly impact tax compliance by improving access to government services, enhancing transparency, and streamlining tax collection processes. For instance, IT investments in online tax platforms and electronic payment systems can reduce administrative burdens and transaction costs, thereby making tax compliance easier for informal sector businesses (Dakhil et al., 2025). Additionally, IT solutions can improve the visibility and accountability of tax revenues, fostering greater taxpayer confidence in the fairness and effectiveness of the tax system (Slemrod, 2007; PwC, 2019).

Leveraging IT investments to enhance tax administration and service delivery can potentially improve the perceived benefits of tax compliance for informal sector taxpayers in Nigeria, thereby promoting voluntary adherence to tax regulations (Dagunduro et al., 2025). The effectiveness of these IT interventions, however, is contingent on factors such as the design and execution of IT systems, access to technology, and the level of trust in government institutions (Aluko et al., 2022; Akinadewo et al., 2023; OECD, 2019). Tax benefit theory, which emphasizes how perceived benefits influence tax compliance, provides valuable insights into taxpayer behavior and informs various aspects of tax policy and enforcement (Andreoni et al., 1998). Despite its contributions, Tax benefit theory has limitations. It tends to oversimplify human behavior by assuming rationality and accurate assessment of tax compliance costs and benefits (Alm, 2012). Critics such as Kirchler (2007) and Torgler (2003) argue that the theory overlooks psychological, social, and cultural factors affecting tax compliance, while Ouyang et al. (2023) suggest it fails to account for the complexity and heterogeneity of taxpayer behavior.

**2.3 Empirical Review**

This research examined pertinent literature concerning information technology investment and tax compliance in accordance with the study's specific objectives and hypotheses thereby formulated.

**2.3.1 Computer Software Investment and Tax Compliance**

Ogunleye and Adesina (2023) evaluated how investments in tax software impact tax compliance among SMEs in Nigeria. A survey of 120 SMEs using structured questionnaires, with data analyzed through regression analysis. The study found a positive correlation between tax software investment and improved tax compliance, highlighting that software tools enhance accuracy and reduce errors in tax reporting. Similarly, Ouyang et al. (2023) found that advanced tax software significantly boosts compliance rates among individual taxpayers in Taiwan by simplifying tax filing and providing real-time support. Smith and Lee (2023) supported these findings through a longitudinal study in the UK, demonstrating that tax compliance software improves accuracy and timeliness of tax submissions. Nguyen and Tran (2024) further confirmed the benefits of tax software in Vietnam, showing that integrated solutions enhance compliance for large corporations by streamlining processes and improving data accuracy.

Jones and Patel (2023) investigated the impact of tax software investment on tax reporting efficiency in South Africa. Their survey of 100 tax professionals found that investing in tax software significantly enhanced reporting efficiency by reducing manual processing time and minimizing errors. Similarly, Martinez et al. (2023) assessed the effectiveness of cloud-based tax software for SMEs in Spain. The study showed that cloud-based solutions improved compliance rates by offering easy access to tax tools and real-time updates, which aided in managing tax obligations more effectively. Brown and Wilson (2024) examined how tax compliance software influenced behavior among public sector employees in the US. The survey of 130 employees revealed that such software positively affected compliance behavior by making tax submissions easier and reducing errors. These studies collectively highlight the benefits of tax software in enhancing reporting efficiency and compliance across various contexts.

While Ogunleye and Adesina (2023) demonstrated the positive impact of tax software on compliance among SMEs in Nigeria, and similar benefits were noted by Ouyang et al. (2023) in Taiwan, Smith and Lee (2023) in the UK, and Nguyen and Tran (2024) in Vietnam, these studies predominantly focused on formal sectors and larger entities. Jones and Patel (2023) and Martinez et al. (2023) also highlighted the efficiency and compliance benefits of tax software in South Africa and Spain, respectively, while Brown and Wilson (2024) confirmed positive behavioral changes among public sector employees in the US. However, there is limited research specifically addressing the informal sector in Nigeria, which faces unique challenges in tax compliance. This study intends to fill this gap by examining how investments in tax software can influence tax compliance within the informal sector, an area that remains underexplored despite its significant economic impact. Based on the above statements, this study hypothesizes:

***Ho1:*** *Computer software investment does not have a significant positive effect on tax compliance in Nigerian informal sectors.*

**2.3.2 Electronic Tax Platforms Investment and Tax Compliance**

The evaluation of various empirical studies consistently demonstrates the positive impact of electronic tax platforms investment on tax compliance across different countries and business sectors. Garcia and Martinez (2023) employed a mixed methods approach in Spain, combining survey data with qualitative interviews, to show that digital payment platforms significantly enhance tax compliance among small businesses. Similarly, Ouyang et al. (2023) utilized econometric analysis on panel data in China and found a significant positive effect of digital payment platforms on tax compliance behaviors among SMEs. Kumar and Gupta (2021) used a longitudinal design in India, leveraging administrative data and econometric techniques, to reveal that digital payment platforms positively and significantly influence tax compliance rates over time. Nascimento and Silva (2023) conducted regression analysis on survey data from Brazilian businesses, confirming the significant positive impact of digital payment systems on tax compliance.

Nguyen and Tran (2022) also used a combination of survey data and econometric methods in Vietnam, finding a similar positive effect. In Nigeria, Oladipo and Adekunle (2021) employed a qualitative research design, incorporating interviews and case studies, to demonstrate the significant positive impact of digital payment platforms on tax compliance in a dynamic economic landscape. Finally, Park and Lee (2023) used administrative data and econometric techniques in South Korea, concluding that digital payment platforms significantly enhance tax compliance among small businesses. Across these diverse methodologies and contexts, the findings consistently highlight the beneficial role of digital payment platforms in improving tax compliance.

This study aims to address specific research gaps highlighted by previous empirical studies that consistently show the positive impact of digital payment platforms on tax compliance in various countries and sectors. Prior research, such as Garcia and Martinez (2023) in Spain, Ouyang et al. (2023) in China, Kumar and Gupta (2021) in India, Nascimento and Silva (2023) in Brazil, Nguyen and Tran (2022) in Vietnam, and Park and Lee (2023) in South Korea, has demonstrated the significant positive effects of digital payment platforms on tax compliance using diverse methodologies. However, while Oladipo and Adekunle (2021) highlighted the positive impact in Nigeria using qualitative methods, there remains a need for more focused research specifically on the informal sector within Nigeria. This study intends to fill this gap by examining how electronic tax platforms influence tax compliance among informal sector businesses in Nigeria, utilizing a combination of qualitative and quantitative research methods to provide a comprehensive understanding of the issue. Based on the above statements, this study hypothesizes:

***Ho2:*** *Electronic tax platforms investment does not have a significant positive effect on tax compliance in Nigerian informal sectors.*

**2.4 Conceptual Framework**

Figure 1 below illustrates the relationship between the variables under study. Information technology investment (independent variable) and tax compliance (dependent variable).

**Information Technology Investment**

**Tax Compliance**

* Computer Software Investment
* Electronic Tax Platforms
* Tax Compliance (TAC)

**s**

**Figure 1: Conceptual Framework**

**Source: Authors’ Concepts (2025)**

**3. METHODOLOGY**

Survey research design was adopted, utilizing both quantitative and qualitative methods to provide a comprehensive understanding of information technology investment and tax compliance in the informal sector in Ekiti State, Nigeria. Data were collected from primary sources using a well-structured questionnaire. The targeted population of the study comprised 1,440,771 registered MSMEs in Ekiti State as of 31st December 2023 (SMEDAN,2023).

**3.1 Sample size and Sampling techniques**

A sample size of 400 respondents was selected using Taro Yamane’s formula.

To calculate the sample size using Taro Yamane's formula, the formula is:

N

= 1+N(e2)

Where:

* n = sample size
* N = population size (1,440,771)
* e = margin of error (typically 0.05 for a 95% confidence level)

1,440,771

= 1+1,440,771(0.052)

1,440,771

=3,602,9275

= 399.9

The sample size for a population of 1,440,771 registered MSMEs in Ekiti State, using Taro Yamane's formula with a 5% margin of error, is approximately 400.

**3.2 Research Instrument**

Structured close-ended questionnaire was used for data collection for the study. The questionnaire was designed to assess the extent to which informal sector taxpayers have adopted the use of information technology investment in taxation and how it has enhanced tax compliance in the informal sector. The questionnaire was drafted using Likert five-point scale referred to as: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DG) and Strongly Disagree (SD). The questionnaire was in two sections (A and B). Section A comprised of background information of the respondents while Section B comprised of questions that relates to the information technology investment and its effect on tax compliance in the informal sector.

**3.3 Reliability and Validity of Research Instrument**

The reliability and validity of the research instrument will be evaluated using statistical method (Cronbach Alpha). Table 1 explain the quality of the measurements and items to be employed in the analysis. It was indicated that all of the questionnaire items do not meet the criteria of the 0.6 threshold for the outer loadings and they were expunged from the measurements considered for analysis. All questions raised for computer software investment (CPSW) have factors loading above the threshold of 0.6 and were all included in the analysis. Also, for electronic tax platform investment (ETPIV), question 3 only have factors loading lower than the threshold and is excluded from the analysis. For tax compliance (TXCOM), items 2, 3, 4 and 5 have factors loading below the threshold and was removed from the partial least square analysis. The remaining items were tested for internal consistency and all the variables have composite reliability that is above the 0.7 required threshold. The convergent validity is measured using the average variance extracted (AVE) and it shows that convergent for the variables are valid except for computer software investment as it is less than 0.50 as suggested by Bangozzi and Yi (1998).

**Table 1a: Constructs Reliability and Validity for Computer Software Investment**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Indicators** | **Factor loadings** | **Cronbach Alpha** | **Composite reliability** | **Average Variance Extracted** | **No of Items** |
|  |  |  |  |  |  |  |
| **Computer Software Investment** | CPSTW1 | 0.602 | 0.803 | 0.717 | 0.326 | 6 |
| CPSTW2 | 0.589 |
| CPSTW3 | 0.752 |
| CPSTW4 | 0.691 |
| CPSTW5 | 0.727 |
| CPSTW6 | 0.806 |

The table shows the result analysis for reliability of the investigated variable.

**Source: Authors’ Computation (2025)**

**Table 1b: Constructs Reliability and Validity for Electronic Tax Platforms Investment**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Indicators** | **Factor loadings** | **Cronbach Alpha** | **Composite reliability** | **Average Variance Extracted** | **No of Items** |
|  |  |  |  |  |  |  |
| **Electronic Tax Platforms Investment** | ETPIV1 | 0.740 | 0.756 | 0.836 | 0.505 | 5 |
| ETPIV2 | 0.678 |
| ETPIV3 | 0.475 |
| ETPIV4 | 0.666 |
| ETPIV5 | 0.722 |
| ETPIV6 | 0.708 |

The table shows the result analysis for reliability of the investigated variable.

**Source: Authors’ Computation (2025)**

**Table 1C: Constructs Reliability and Validity for Tax Compliance**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Indicators** | **Factor loadings** | **Cronbach Alpha** | **Composite reliability** | **Average Variance Extracted** | **No of Items** |
|  |  |  |  |  |  |  |
| **Tax Compliance** | TAXCOMP1 | 0.768 | 0.558 | 0.767 | 0.526 | 3 |
| TAXCOMP2 | 0.553 |
| TAXCOMP3 | 0.422 |
| TAXCOMP4 | 0.217 |
| TAXCOMP5 | 0.141 |
| TAXCOMP6 | 0.584 |
| TAXCOMP7 | 0.612 |

The table shows the result analysis for reliability of the investigated variable.

**Source: Authors’ Computation (2025)**

Table 2 presents the results for the discriminant validity which is obtained using Fornell-Larcker Criterion and it is calculated using the square root of AVE in each latent variable. This test is important in order to validate the degree to which measures of different traits are unrelated in order to prevent multicollinearity issues. The values are expected to be higher than the correlation values among the latent variables. As presented in Table 2 that the results showed that for computer software investment (CPSW) is 0.571 and this is greater than correlation value between computer software investment (CPSW) and electronic tax platform investment (ETPIV) and tax compliance (TXCOM). It is also observed that for electronic tax platform investment (ETPIV) is 0.711 which is higher than the correlation between tax compliance (TXCOM) and computer software investment (CPSW). It further shows that the correlation value for tax compliance (TXCOM) which is higher than the correlation between electronic tax platform investment (ETPIV) and computer software investment (CPSW).

**Table 2: Discriminant Validity**

|  |  |  |  |
| --- | --- | --- | --- |
| **Study Variables** | **Computer Software Investment** | **Electronic Tax Platform Investment** | **Tax Compliance** |
| **Computer Software Investment** | 0.571 |  |  |
| **Electronic Tax Platform Investment** | 0.503 | 0.711 |  |
| **Tax Compliance** | 0.192 | 0.556 | 0.725 |

The table shows the result analysis for reliability of the investigated variable.

**Source: Authors’ Computation (2025)**

**3.5 Model Specification**

This study adapted its econometric from the model developed by Supratiwi et al. (2023), which examined the impacts of information technology investment and organizational capabilities on organizational performance: Evidence from Indonesian Public Sectors. The model is specified as follows:

OGP = β0 + β1HDI + β2SOI + β3ISI + ε

Where:

OGP = Organizational Performance

HDI = Hardware Investment

SOI = Software Investment

ISI = Internet Technology-based Software Investment

Σ = Stochastic Error Term

β0 = Intercept

β1, β2, β3 = The Coefficients of the independent variable

For this study, the model was adapted to include the variables related to information technology investment and tax compliance in the informal sector in Ekiti State, Nigeria. It would however be limited to two of the variables that would define information technology investment. The adapted model is specified as follows:

TAC = β0+ β1CSI + β2ETP + ε

Where:

TAC = Tax Compliance

ITI = Information Technology Investment

CSI = Computer Software Investment

ETP= Electronic Tax Platforms

Σ = Stochastic Error Term

β0 = Intercept

β1, β2 = The Coefficients of the independent variable

The *a-priori* expectation = β1, β2> 0, this suggests that a positive correlation is anticipated between the explanatory variables and the dependent variable.

**3.6 Data Analysis Techniques**

The data were analysed using both descriptive statistics (mean, variance, skewness, kurtosis) and inferential statistics (correlation and regression analysis) to summarize basic features and make broader inferences about the population.

**4. RESULY AND DISCUSSION**

**4.1 Data Presentation**

Descriptive statistics was used on the background information of the respondents and doing this is considered appropriate as this will help to showcase the appropriateness of the respondents allowed to participate in the study and their knowledge on the subject matter. The descriptive statistics were in form of percentages and frequencies on the background information of the respondents is described in table 3. According to representation described in the table it was indicated that the total number of questionnaires are ministered and returned within the same time frame allocated to is 399. The background information shows that 117 of the responding representing 29.32 percent of the total respondents have little knowledge in computer our beginner when it comes to computer literacy and another 227 of the respondents’ representing 56.89 percent have average expertise in computer literacy and another 55 of the respondents’ representing 13.78 percent are experts in computer usage.

Likewise on table 3 it is shown that 170 respondents representing 42.71 percent of the total respondents indicated that their business is not automated meaning they don’t use ICT in the business operation and another 184 of the total respondents representing 46.23 respondents imply that their business is partially automated why the remaining 44 of the respondents’ representing 11.06 percent indicated that their business operation are fully automated. The level of investment in information technology by this business in the informal sector from minimum to significant. Many of the respondents indicated that their business has minimized investment in information technology evidenced by frequency of 214 responding representative 54.04 percent and another 62 respondents representing 40.91 percent of the total respondents indicates moderate investment in information technology in their business while the remaining 20 respondent indicating 5.05 indicate that they make significant investment in information technology.

Lastly on the table, it is shown that the larger percentage of the respondent have basic ICT infrastructure in their company represented by 272 respondent agreeing to this which is 68.51 percent of the total responding and another 109 respondent indicate that they make use of cloud services for storage in their business which is an intermediate investment while the remaining 16 respondents representing 4.03 percent of the total respondent imply that they use advanced ICT like ERP.

**Table 3: Demographic Information of Respondents**

**Demographic Information Frequency Percentages Cumulative**

**Level of Computer Literacy**

Beginner 117 29.32 29.32

Average 227 56.89 86.22

Expert 55 13.78 100.00

**Total 399 100.00**

**Level of Computer System Automation**

Fully Automated 44 11.06 11.06

Not Really Automated 170 42.71 53.77

Partially Automated 184 46.23 100.00

**Total 399 100.00**

**Level of Investment in Information Technology**

Minimal Investment 214 54.04 54.04

Moderate Investment 162 40.91 94.95

Significant Investment 20 5.05 100.00

**Total 399 100.00**

**Current IT Infrastructure**

Advanced ERP. 16 4.03 4.03

Basic (Computer Software) 272 68.51 72.54

Intermediate (Cloud Services) 109 27.46 100.00

**Total 399 100.00**

The table shows the results analysis of the demographic information of the respondents

**Source: Researcher’s Computation (2025)**

**4.1.1 Descriptive Statistics**

The summary of the respondents’ opinion about periodic tax audit, external tax audit, special tax audit and tax revenue yield are presented in Table 4. The descriptive statistics showed that the average response of respondents as regard tax revenue tax compliance (TAXCOM) of the businesses in informal sector in Ekiti state is 4.2080 which signify the agreement to the question raised to a large exchange as the figure is closer to agree on the Likers scale and the standard deviation is 0.7259 indicating that the response of the respondent as regards tax compliance moderately various considering is distance from the mean value showing 17.25 percent coefficient of variation with the maximum value of 5 indicating strongly agree and minimum value of 2 implying disagree and the total sum of the response for tax compliance (TAXCOM) is 1679. The response shows a negative skewed and abnormal distribution and skewedness of -1.009and kurtosis of 4.567.

The descriptive statistics further show that the average response of respondents has regard computers software investment (CPSTW) is 4.1825 which signify the agreement to the question raised and the standard deviation is 0.5337 indicating at the response of the respondents as regard computer software investment moderately varies considering the distance of standard deviation to the mean showing 12.76 coefficient of variation with the maximum value of 5 indicating strongly agree and minimum value of 3 which imply undecided on the likert scale. The sum of the response on computer software investment is 1673 and the skewedness shows a positive value and normal distribution which is evidenced by 0.1374 and kurtosis of 3.0259

Lastly on Table 4, the descriptive statistics showed that the average response of respondents as regard electronic tax platforms investment (ETPIV) is 4.2982 which signify their agreement to the questions raised. The standard deviation is 0.5570 indicating that the responses of the respondents as regard electronic tax platforms investment (ETPIV) moderately varies considering its distance from the mean value, showing 12.96 coefficient of variation, with the maximum value of 5 and minimum value of 2. The sun of the responses for electronic tax platforms investment (ETPIV) is 1715. The responses showed a negative skewed and abnormal distribution having skewedness of -0.2924 and the kurtosis value 3.9207 indicating that the response is abnormally distributed.

**Table 4: Descriptive Statistics of** **Study Variables**

Variables TAXCOM CPSTW ETPIV

OBS 396 396 396

Mean 4.2080 4.1825 4.2982

S.D. 0.7259 0.5337 0.5570

C.V 0.1725 0.1276 0.1296

Min 2 3 2

Max 5 5 5

Sum 1679 1673 1715

Skewedness -1.009 0.1374 -0.2924

Kurtosis 4.5670 3.0259 3.9207

The table shows the results analysis of mean, standard deviation, number of observation, minimum and maximum statistics, kurtosis, and skewness.

**Source: Author’s Computation (2025)**

**4.2 Test of Hypothesis**

For the test of the hypothesis in order to establish the specific objectives of the study, partial least squares structural equation modelling (PLS-SEM) technique is employed to examine the relationships and effects between the variables. This is considered more advantageous due to its superior to other techniques in analysing small size samples or data with non-normal distribution which can be a feature in survey data. To test the significance of the PLS-SEM results, bootstrapping procedure was used and all constructs under the endogenous variable was analysed with each exogenous variable and the path co-efficient were reported. In testing the hypotheses stated by the study, the relationship between information technology investment and tax compliance is examined. Spearman correlation which is a non-parametric test suitable for hypothesis testing in survey research was employed. Doing this will help establish the contribution of computer software (CPSW) and electronic tax platform investment (ETPIV)as measures for information technology investment that impact tax compliance of business especially in the informal sector in Ekiti State Nigeria. The correlation result is presented in Table 5.

The correlation results shows that tax compliance (TXCOM) have positive relationship with computer software investment (CPSTW) and the relationship is significant in such a way that one time improvement in computer software investment (CPSTW) will increase tax compliance (TXCOM) by 29.36 percent. This is evidenced by coefficient of 0.29.36\*and P-value of 0.0000. The correlation results shows that tax compliance (TXCOM) have positive relationship with electronic tax platforms investment (ETPIV) and the relationship is significant in such a way that one time improvement in electronic tax platforms investment (ETPIV) will increase tax compliance (TXCOM) by 40.62 percent. This is evidenced by coefficient of 0.4062\*and P-value of 0.0000. It is further observed that the relationship between the independent variables which serve as the measurements of information technology investment has positive relationship with one another and it is not strong enough to cause one of the variables to stand in for another.

**Table 5: Correlation of the Study Variables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Spearman’s rho** | **Tax Compliance** | **Computer Software Investment** | **Electronic Tax Platforms Investment** |
| **Tax Compliance** | Coefficient  Sig. (2-tailed) | 1.000  - |  |  |
| **Computer Software Investment** | Coefficient  Sig. (2-tailed) | 0.2936\*  0.0000 | 1.000  - |  |
| **Electronic Tax Platforms Investment** | Coefficient  Sig. (2-tailed) | 0.4062\*  0.0000 | 0.3616\*  0.0000 | 1.000  - |

The table shows correlation analysis for investigated variables

**Source: Researchers’ Computation (2025)**

**4.3 Information Technology Investment and Tax Compliance in the Informal Sector of Ekiti State, Nigeria**

The specifics objective of the study is to investigate if computer software investment (CPSW) and electronic tax platform investment (ETPIV) as measures for information technology investment can influence tax compliance (TAXCOM) of informal sector business in Ekiti State and to achieve this objective, Partial Least Square Structural Equation Modelling (PLS-SEM) was employed. The path coefficient, t-statistic value, probability value and R-Square determination, effect size (ꝭ2), the predictive relevance of the model, and the predictive relevance of the model index were the core standards for evaluating the structural model as shown in the figures 1 and the other statistical reports are presented in subsequent tables.

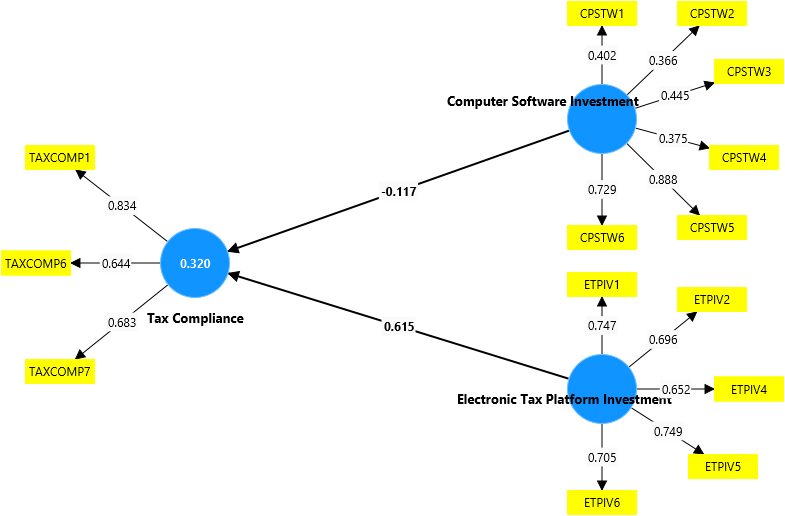
The overall findings as shown in figure 1 and table 6 respectively indicate that tax compliance (TXCOM) have 32.0 percent variance explained by information technology investment, and this can be regarded as high variance. The model is of good fit as the standardized root mean square residual (SRMR) have value not above 0.1 and the normed fit index (NFI) close to 1 (Hensele at al*.,* 2014; Lohmoller, 1989). The contribution of each attribute to the R-square was indicated by the effect size (F-Square) and it is observed that computer software investment (CPSW) have the weakest magnitude having value of 0.015 which is below 0.1 recommended by Cohen (1988) and the implication is that if other exogenous variable is held constant while computer software investment (CPSW) is removed, r-square will vary by 1.5 percent. It is however observed that if other exogenous variables are held constant while electronic tax platform investment (ETPIV) is removed, it will cause r-square to vary by 41.6 percent which can referred to as a high magnitude of influence.

Considering the predictive relevance of each exogenous variable in the model as indicated by Q2 shows that the model has predictive relevance since the value is greater than 0. From Table 6. The P-value of all constructs indicates in fig.1 shows a significant influence in the analysis as it is less than ≤0.05. It is indicated that computer software investment (CPSW) has direct negative and insignificant influence on tax compliance (TXCOM)showing coefficient of-0.117; t-statistics of 1.188 and P-value of 0.235. The use of computer software in the informal sector does not necessarily translate to easy scaling of business operations as it grows and for this opinion many small businesses does not subscribe to it. And for the fact that many of the business are beginners in computer literacy with basic computer software infrastructure, they make less effect on tax compliance and as payment of tax has been treated optional because of less experience and understanding on handling an ever-revolving tax processing.

Likewise, it was observed that electronic tax platform investment (ETPIV) has positive and significant influence on tax compliance (TXCOM) showing coefficient of 0.615; t-statistics of 9.224 and P-value of 0.000. The implication is that business owners in the informal sector can get tax automation without complex computer software which allow them to submit their files from any location with internet connectivity, at their convenience. More so, the digital tax platform can be accessed without heavy investment in information technology. With the results of the study, it implies that heavy investment in computer software does not significantly affect tax compliance while electronic tax platform investment is significant hence the null hypothesis that ***Computer software investment does not has a significant positive effect on tax compliance in Nigerian informal sector is accepted*** while the null hypothesis that ***Electronic tax platforms investment do not have a significant positive effect on tax compliance in Nigerian informal sectors* is rejected**.

The findings of the study based on the empirical result shows that information technology investment positively affects the tax compliance. The result aligns with the support Ogunleye and Adesina (2023) which evaluated how investments in tax software impact tax compliance among SMEs in Nigeria. The findings revealed a positive correlation between tax software investment and improved tax compliance. Likewise, it supports the result of Ouyang et al. (2023) which found that advanced tax software significantly boosts compliance rates among individual taxpayers in Taiwan after examining determinants of tax compliance among Taiwan taxpayers. Brown and Wilson (2024) did a study in the advanced countries (USA) and found out that tax compliance software influenced behavior among public sector employees in the US. Likewise, it is observed to align with the result of Nascimento and Silva (2023) which conducted survey on Brazilian businesses and the findings confirmed the significant positive impact of digital payment systems on tax compliance.

**Figure 2: Partial Least Square Structural Equation Modelling showing the Effect of Information Technology Investment on Tax Compliance in the Informal Sector of Ekiti State, Nigeria**

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**Source: Authors’ Computation (2025) SMART-PLS4**

**Table 6: Effect of Information Technology Investment on Tax Compliance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Constructs** | | **Path Co-efficient** | **T- Statistics** | **P- Values** |
| Computer Software Investment -> Tax Compliance | | -0.117 | 1.188 | 0.235 |
| Electronic Tax Platform Investment -> Tax Compliance | | 0.615 | 9.224 | 0.000 |
|  | **R Square** | **R Square Adjusted** | **Q2** | |
| Tax Compliance | 0.320 | 0.316 | 0.313 | |
|  | **F-Square (Effect Size)** | **Model\_ Fit Summary** | | |
| Computer Software Investment  Electronic Tax Platform Investment | 0.015  0.416 | SRMR - 0.115  NFI - 0.577  RMSE – 0.835 | | |

The table shows the regression analysis for the investigated variables

**Source: Researcher’s Computation (2025)**

**4.4 Discussion**

The empirical analysis showed that electronic tax platform investment had positive and significant effect on tax compliance among the Nigerian informal sector. This means that as more resources are allocated to develop and implement these platforms, tax compliance increases. The significance of the effect implies that the relationship between electronic tax platforms and compliance is statistically meaningful and substantial. It suggests that digitalizing tax systems is an effective strategy for improving compliance in sectors where tax evasion is often prevalent. On the other hand, computer software investment had positive and insignificant effect on tax compliance. While there is a positive relationship suggesting that the use of software might improve compliance, it is not statistically significant. This means that the effect is too weak to conclude that computer software investment meaningfully enhances tax compliance. It could imply that such software, while helpful in other aspects of business, does not directly impact the behavior or willingness of informal sector actors to comply with tax regulations. In summary, while digital tax platforms are shown to be effective in boosting tax compliance in Nigeria's informal sector, general investments in software do not have the same impact. This suggests that targeted digital tax solutions are more effective for enhancing compliance than broader technological investments. These results align with the findings of Dagunduro et al. (2025) which found that tax strategies had significant effect on tax compliance in Nigerian informal sector. Similarly, the findings corroborate with the findings of Dakhil et al. (2025) which found that digital tax administration had significant effect on tax compliance in Nigerian economy. Also, the results support the findings of Falana et al. (2024), which found that electronic tax system significantly enhanced tax compliance.

The significant effect of electronic tax platform investments on tax compliance suggests that policymakers should prioritize the development and implementation of robust digital tax systems. These platforms, such as e-filing systems, online tax payment services, and real-time reporting mechanisms, can make tax processes more accessible, transparent, and efficient for informal sector participants. By simplifying tax filing and payment processes, these platforms can reduce the compliance burden and promote voluntary compliance. To maximize the impact of electronic tax platforms, the government should consider offering incentives to informal sector businesses for adopting and using these platforms. Incentives could include tax rebates, simplified registration processes, or technical assistance, which would help ease the transition to digital tax systems. Promoting awareness and training on how to use these platforms would also be crucial for ensuring their widespread adoption. The finding that general computer software investments have an insignificant effect on tax compliance suggests that not all technological investments yield direct improvements in compliance. Policymakers should recognize that while software may improve other business functions, it is not enough on its own to change compliance behavior. Therefore, public funds and resources should be channelled towards specialized tax systems rather than general-purpose software. To sustain the positive effect of electronic tax platforms, investments in the underlying digital infrastructure, such as internet connectivity, data security, and access to devices, are essential. Ensuring that informal sector actors, particularly those in rural areas, have reliable access to these platforms will enhance their effectiveness in promoting compliance.

The findings align with the tax benefit theory in the following ways: The investment in electronic tax platforms can be seen as reducing the administrative burden on taxpayers in the informal sector, making tax compliance more straightforward and less time-consuming. When individuals and businesses see that tax platforms improve the ease of paying taxes, they may perceive compliance as a benefit saving time, reducing stress, and avoiding penalties. This perceived benefit encourages greater voluntary compliance. The resources saved through more efficient tax compliance systems could be used to enhance public services, especially those visible to informal sector participants. If these taxpayers see tangible improvements in infrastructure, social services, or other public goods because of tax revenues, their willingness to comply could further increase. The digital tax platforms help create a clearer link between the taxes paid and the benefits received, reinforcing the tax benefit theory. In contrast, the insignificant effect of broader software investments on tax compliance suggests that general technological improvements do not have the same direct benefit perceived by taxpayers in terms of compliance. For tax compliance to improve, there needs to be a clear benefit, such as reduced complexity or improved public services tied to the digitalization of tax systems. This further emphasizes the need for tax policies to create visible and direct benefits for taxpayers, as proposed by the tax benefit theory.

**5. Conclusion and Recommendations**

Tax compliance has been viewed as a significant issue for many states government that needs to boost their tax revenue and not depend solely on federal allocation to boost the economy of their state. Apart from the effort of the tax authorities, some other factors from taxpayers could aid their compliance especially among the informal business which dominate MSMEs and in Ekiti state which is one of the states with low internally generated revenue in the country. Thus, the study specifically focused on examination of the computer software investment and electronic tax platform investment, and how they affect the tax compliance in the informal sector in Ekiti state. The study findings shows that when informal business make investment on automation that allows make tax filling and submit their files from any location with internet connectivity at their own convenience makes tax evasion not justifiable hence improving tax compliance while the lack of small business in prioritizing investment in computer software has negatively affect their compliance.

Finally, the study concludes that investment in digital tax platforms have contributed to diminishing tax processing time and its user-friendly nature has improved compliance of taxpayers in the informal sector of Ekiti state. Also, when considering form of capital investment that can improve tax compliance, computer software investment is not significant. Based on the study's conclusions and findings, it is recommended that business owners should not embrace investment in computer software investment for tax purpose because it is inadequate and the cost can discourage tax compliance, and taxpayers should be encouraged to improve on their computer literacy so they can easily file their taxes and submit their files with ease and convenience in order to boost their tax compliance. Lastly, business owners should focus on enhancing the digital infrastructure that supports electronic tax platforms.

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