

TECHNOLOGICAL READINESS AND ELECTRONIC TAX FILING ADOPTION IN JIGAWA STATE SMEs: EXAMINING THE ROLES OF OPTIMISM AND INNOVATIVENESS

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Abstract

This study investigates how technological readiness particularly optimism and innovativeness shape the adoption of electronic tax filing (E-tax filing) systems among small and medium sized enterprises (SMEs) in Jigawa state, Nigeria. The paper was driven by the need to strengthen tax administration and boost internally generated revenue through digital platforms. Using cross sectional survey design, data were gathered from registered SMEs in Jigawa state through structured questionnaires and analyzed using partial least squares structural equation modeling (PLS- SEM). The results show that optimism has a significant positive effect on e-tax filing adoption, indicating that a favourable outlook toward technology drives greater acceptance of electronic tax systems. Also, innovativeness was found to positively influence adoption, showing that SMEs more willing to try new technologies are more inclined to adopt digital tax platforms. Finally, the study concludes that technological readiness is a key driver of e-tax filing adoption among SMEs in Jigawa state. It recommends that government through tax authorities intensify awareness efforts, offer sustained technical support, and pursue policies that foster innovation to encourage wider adoption of electronic tax filing.

Keywords: technological readiness, e- tax filing, optimism, innovativeness, smes

1. Introduction

The growing adoption of Information and Communication Technology (ICT) into public financial management has greatly changed tax administration in both developed and emerging economies, making digital transformation a central policy priority for governments seeking to improve efficiency, transparency, and revenue mobilization. A key outcome of this shift is electronic tax filing (e-tax filing), which is a critical Accounting Information System (AIS) innovation and a core component of modern e-government initiative that allows taxpayers to submit returns electronically through secured, internet-based platforms rather than in person.

By automating tax processes, e-tax filling reduces human error, shortens processing time, improves data accuracy, and strengthens tax authority's capacity to monitor and enforce compliance, while lowering administration costs for both authorities and tax payers (Hgoc & Van, 2016; Giulia et al. 2021; Uyar et al., 2021).



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Internationally, advanced economies such as the United States, Canada, and several European countries have successfully implemented e-tax filing systems, resulting in improved revenue collection and greater taxpayer satisfaction (Ngoc & Van, 2016). In developing countries, however, the adoption of e-tax filing remains uneven and relatively slow, particularly among small and medium-sized enterprises (SMEs), which constitute the backbone of most developing economies (Masud, 2019).

In Nigeria, despite the introduction of electronic tax platforms by the Nigerian Revenue Service (Formerly Federal Inland Revenue Service) and several state tax authorities, the level of adoption among SMEs remains suboptimal (Aliyu & Sadiq, 2019). Despite, Small and medium-sized enterprises (SMEs) play a pivotal role in Nigeria's economic development through employment generation, innovation, and income distribution. However, their contribution to tax revenue remains disproportionately low, partly due to poor compliance and limited adoption of electronic tax systems (Aladejebi, 2018).

The National Bureau of Statistics (NBS) report for 2021, shows that there is a considerable fall in internally generated revenue (IGR) in Nigeria. For example, total income collected for 2019 was N64 billion and that of 2020 was N61 billion, reflecting a considerable decline in IGR (National Bureau of Statistics, 2021). Furthermore, Aliyu, Sadiq (2019), and Masud (2019) attribute these declines largely to the slow adoption of e-tax filing by various levels of government in Nigeria.

In the same vein, Jigawa State's limited use of IT for tax administration has contributed to a sustained decline in its internally generated revenue. For instance, the IGR for 2020, 2021, 2022 and 2023 was N20,659b, N16,492b, N20,549b and N27,536b, respectively (ThisDay, 2022). Given this, adopting e-tax filing becomes essential, as Mashabele and Kekwalestwe (2020) suggest it could help boost government revenue generation internally. These fluctuations in tax internally generated revenue (IGR) in recent years also point to underlying weaknesses in tax administration and compliance systems, especially among SMEs. Although technological infrastructure has seen gradual improvement, whether SMEs are willing and prepared to adopt e-tax filing remains a pressing issue for policymakers.

Some studies indicate that e-tax filing adoption depends on more than just system availability or regulatory pressure; it is also strongly shaped by users' psychological readiness to engage with technology (Parasuraman & Colby, 2015). The Technology Readiness Index (TRI) offers a useful lens for examining how individual beliefs and attitudes influence technology adoption behavior in this context. Of its four dimensions, optimism and innovativeness function as positive forces that push individuals and organizations toward embracing new technologies (Parasuraman, 2000). Yet despite rising interest in e-tax filing, there is still limited empirical work examining how optimism and innovativeness specifically affect SMEs' adoption decisions at the sub-national level, as in Jigawa State.

Much of the existing literatures in Nigeria centers on broad acceptance model or compliance behaviour, without clearly separating out the motivational elements of technological readiness. This study addresses that gap by exploring how optimism and innovativeness influence e-tax filing adoption among SMEs in Jigawa State Nigeria. Its focus on technology readiness drivers provides a more detailed understanding of how

positive beliefs and an innovative mindset can strengthen digital tax reform efforts in developing economies.

The main objective of this study is to examine the effect of technological readiness on the adoption of electronic tax filing among small and medium-sized enterprises (SMEs) in Jigawa State, Nigeria, with particular emphasis on the roles of optimism and innovativeness. To achieve the main objective, the study seeks to:

- i. Examine the influence of optimism on the adoption of electronic tax filing among small and medium-sized enterprises (SMEs) in Jigawa State.
- ii. Determine the effect of innovativeness on the adoption of electronic tax filing among small and medium-sized enterprises (SMEs) in Jigawa State

2. Literature Review

Conceptual Review

Electronic Tax Filing (E-Tax Filing)

Mashabela and Kekwaletswe (2020) described electronic tax filing (E- Tax Filing) as an e-government tools for services. This is an application designed for submission of tax returns to tax authority through the internet platform. Uyar et al. (2021) also viewed electronic taxation (e- taxation) comprise as taxation related activities that is done on line such as e-filing system and e-payment for the purpose of creating satisfactory service delivery and increase revenue generation during tax payment.

This service began in USA around 1986, e-tax payment was introduced in Australia in 1986. While 1993 in Canada. However, Netherlands and Malaysia adopted such system to their taxpayers in 2009. According to Olaoye and Kehinde (2018) in Africa, e-tax filing began in Uganda, then Egypt during 2009 and 2013 respectively. The growth of this system has provided a ground for firms dealing with accounting issues to prepare return on their tax assessments for submission via internet to tax authority.

The merit of having a tax authority is due to the fact that they are more knowledgeable on tax matters, such as allowable deductions, tax incentives and tax laws enabling them keeping records for the subsequent tax period (Nagarthum, 2021). Where the tax authority is unable to willingly participate in the effort of the state in introducing e-tax filing, BIR would not have success in achieving their targeted goal. As such the success of e-tax filing depends on full participation of tax authority

In Nigeria, e-tax filing began in 2013 by the Federal Inland Revenue thereby allowing online correspondence with Federal Inland Revenue Service (FIRS) (FIRS, 2020). According to Nagaratnam (2021) manual filing allows more time for tax officers to check each individual tax submissions. However, filing online allow user to have protection of hacking by public key infrastructure (PKI), auto calculation of tax, accurate submission of forms and security. Others are processing tax return as accurately as possible.

E-tax filing has generated a lot of benefits. For instance, payment of taxes as at when due in order to finance its day-to-day obligations (Mashabela & Kekwaletswa, 2020). Others included Automatic calculation of tax during computing tax returns. Moreover, its ability to reduce error that is human in nature as well as improving efficiency during processing (Imran & Shah, 2019). In addition to that, cost incurred during tax returns are no longer incurred, hence, authorities do not capture the tax return using manual means.



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Safekeeping cost and handling cost are also minimized (Azmi & Kamaruzzaman, 2009; Imran & Shah, 2019).

Adil et al. (2021) argued that, real time approach is made possible for both the parties involved in which transaction can provide instant feedback within a split second with a confirmation of activity done. The benefit does not stop with the tax payers only but also moves on to the administrators who are the tax authorities. This includes the reduction in workload and cost of operations owing to submission of paperless tax returns. (Ngoc & Van 2016). Consequently, tax increases the internally generated revenue (IGR) derived by a state. Hence, economic capability of a state is measured by how much it gathers as revenue generated internally. This will enable it meet its recurrent expenditure easily not to fully rely on subvention from the Federation Account (Revenue Statistics, 2024).

As shown in figure 1 below, Internally Generated Revenue (IGR) of Jigawa State has shown some volatility from 2020 to 2023, with a notable dip in 2021 compared to 2020. Total IGR stood at ₦20.66billion in 2020, fell to ₦16.49billion in 2021, and then rose steadily through 2022 and 2023, reaching a peak of ₦27.54billion in 2023 a notable improvement. Even so, the figures show that tax revenue makes up only a small percentage of the total IGR, with most of it coming from non-tax revenue sources, which points to inefficiencies in tax collection and possible underreporting by businesses and individuals. This inconsistency in IGR raises questions about how reliable the state's revenue generation really is. Although 2023 marked a recovery, the earlier year on year decline reveal underlying weaknesses in the collection system.

Tax revenue, despite its growth, still trails well behind other IGR components, suggesting that current collection methods are not sufficiently modernized to capture the full tax potentials of the state, especially from SMEs. High reliance on non-tax sources is also concerning given how volatile and unpredictable such revenue streams tend to be over time. Introducing an electronic tax filing system could help address these issues by substantially improving the state's tax collection performance.

E-filing would streamline the filing process, ease administration burdens, and encourage greater compliance. For SMEs specifically, digital tools could simplify tax payment and make it easier to meet legal obligations while contributing more efficiently to state revenue. Evidence from other regions shows that such systems tend to boost compliance and revenue helping stabilize public finances and reduce overdependence on unstable non-tax income. This study examines how technological readiness can support e-filing adoption and in turn help strengthen the state's IGR through more consistent and sustainable revenue generation.

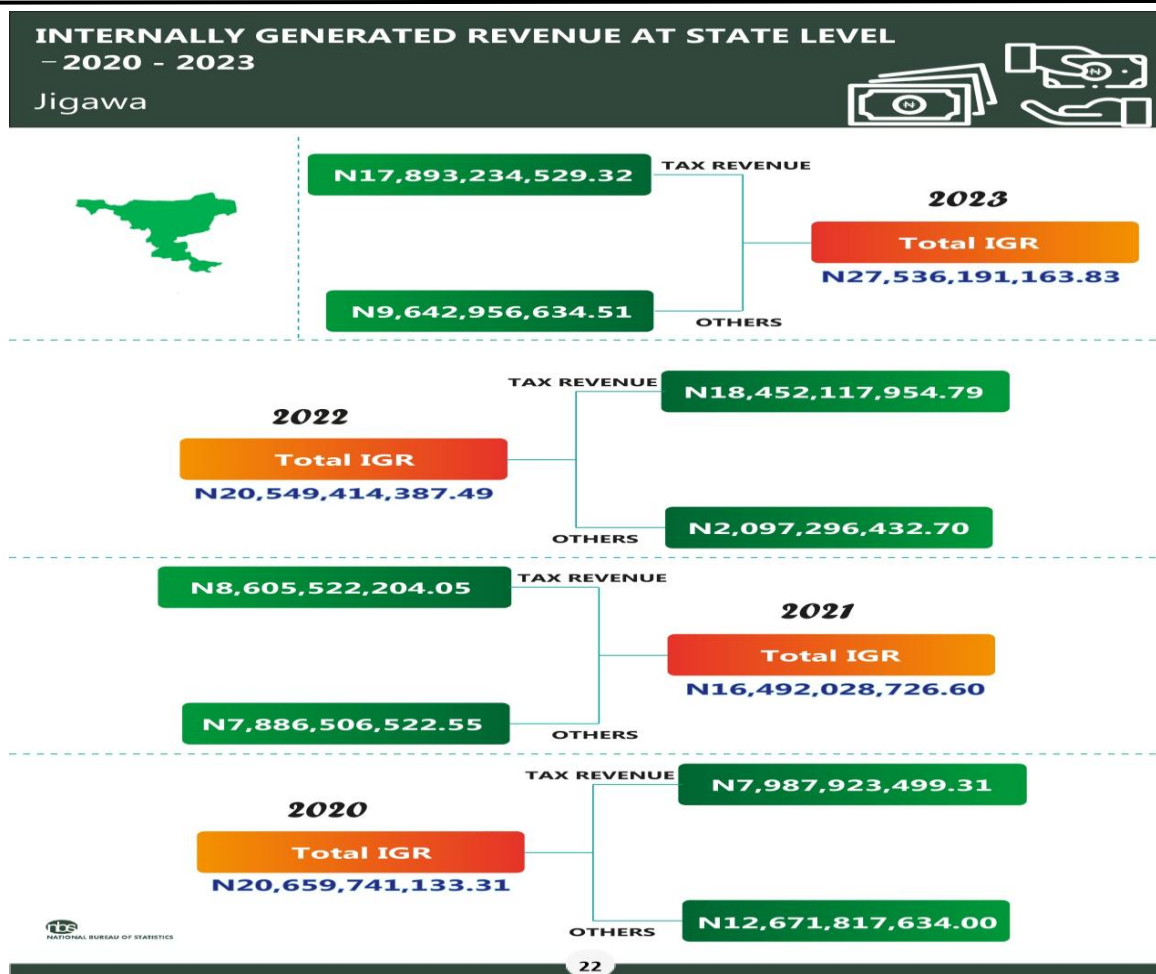


Fig 1: IGR (Jigawa state, Nigeria 2020–2023).

Source: *National Bureau of Statistics NBS (2024).*

Optimism on Intention to use E-Tax Filing

Optimism refers to that aspect of technology that are favorable and positive and beliefs that with certainty, technology will increase efficiency, flexibility, control and productivity in individual's life. (Parasuraman & Colby, 2015). Optimism is measured by how technology will offer people control and efficiency during e-tax filing.

Previous studies discovered that optimism has a positive influence in the readiness to use e- tax filing. For example, Nugroho, and Fajar (2017) examines the effect of technology readiness on a mandatory web-based system. Result shows that only optimism and innovativeness were having significant positive influence rejecting the other variables of perceived ease of use and usefulness respectively. In the context of information system, intention to use a system by a user continuously depended on their loyalty towards such system. Moreover, a higher service quality will motivate user and his optimism will not be discouraged. Early adopters will go ahead using e-tax filing, but could also discouraged user switching to another alternative. (Kumar & Lat, 2021).

Innovativeness on Intention to use E-Tax Filing

This implies feelings to participate, be a pioneer and leader on opinion to stimulate embracing new technology (Parasuraman & Colby, 2015). It involves skill mobilization



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including technological, towards creating new product as well as improving new product or system having considerable value (Cibaroglu *et al.*, 2021), Innovativeness as a construct of technology readiness index measure the possibility to become first in using technology. It also measures how efficient is a user in adopting new technology. In a similar connection, Seol *et al.* (2017) investigating control factor relationships on intention to use a system. The result of the study discovered that innovativeness which was TR construct has a significant positive effect on behavioral intention.

Theoretical Review

Technology Readiness Index (TRI)

The study draws on the technology readiness index, first developed by Parasuraman (2000) and later updated by Parasuraman and Colby (2015). TRI frames technology readiness as a mental disposition, that is, the extent to which individuals and organisations are inclined to adopt and use new technologies to achieve goals both at work and in everyday life. Notably, the framework does not assess technical skill or ability, instead, it captures the psychological tendencies that underlie and shape decision about technology adoption.

TRI comprises four dimensions; optimism, innovativeness, discomfort and insecurity. Of these, optimism and innovativeness act as enablers of technology readiness, while discomfort and insecurity serve as barriers. This distinction matters theoretically, because enablers and barriers operate through distinct cognitive and emotional pathways, barriers help explain resistance or apprehension, while enablers account for motivation, enthusiasm, and proactive technology engagement.

This study centers specifically on optimism and innovativeness because e-tax filing adoption among Nigerian SMEs is largely a voluntary choice rather than something imposed through strict enforcement. In such settings, favourable attitudes toward technology and openness to innovation are more likely to drive adoption than fear or constraint related factors alone. Additionally, narrowing the focus to these two TRI drivers shape the theoretical framing and avoids diluting the construct, which strengthens both the explanatory power and the parsimony of the research model.

Within AIS research, TRI provides a valuable extension to conventional adoption models by highlighting the role of managerial mindset in the uptake of digital accounting and tax systems. As SMEs often lack specialised IT personnel, adoption decisions are closely tied to owner-managers' technological orientation, making TRI particularly appropriate for this study.

Review of Empirical Studies and Hypotheses Development

Several studies were conducted in the area of electronic tax filing adoption systems and other related area in different sectors. Notable among them, as reviewed, are categorically discussed below. In addition, hypotheses were postulated based on the prior findings.

Panday (2023), in his study, studied the effect of technological readiness on technology acceptability when using the distribution of academic information systems. The study chose as many as 285 participants at random from AIS users using a questionnaire devised by Parasuraman and Davis. The analysis is developed using path analysis and computed by AMOS 18. The results of this study reveal that variables Optimism, Innovativeness, Discomfort, and Insecurity have a favourable effect on perceived ease of

use, as evidenced by the p-value less than 0.05 or the value of CR (critical ratio) more than two. The optimism variable does not have a substantial effect on perceived usefulness. Innovativeness and discomfort variables have a substantial positive effect on the variable perceived usefulness, while insecurity has a large negative effect on the measure perceived usefulness.

Another study by Nugroho and Fajar (2017) explores the influence of technology readiness on a mandatory web-based system. In this study, the TRI derivative optimism effect was explored on reported ease of use and perceived innovativeness. So likewise on perceived usefulness and perceived simplicity of use towards behavioural intention of technology usage. In the analysis procedure, 368 respondents were employed, and the data were analysed using the PLS technique. The findings demonstrate that only optimism and innovativeness had a substantial positive influence on e-tax filing, rejecting the other variables of perceived ease of use and utility, respectively.

Furthermore, Nadine et al. (2013), in an article titled Technology readiness in customers' perception and acceptance of mobile payments: an empirical study in Finland, Germany, the USA, and Japan, examined how technology readiness (TR) influences the perception and acceptance of mobile payments by customers. The studies were carried out in four different countries by conducting an online survey to collect data needed in conducting technology adoption analysis utilizing PLS-SEM. However, the finding revealed that optimism positively promotes adoption and use of technology.

Similar findings can be obtained from the research of Kim and Chui (2019) conducted in India on the influence of technology readiness on the uptake of e-learning. The result of the study showed students' positive attitude with regards to their approach to e-learning. In a similar manner, Cibaroglu et al. (2021) examine the technology acceptance model (TAM) and technology ready index (TRI) for analyzing the technical susceptibility acceptances of online attendance systems (OASs). The result demonstrated that according to the 0.70 threshold of the alpha score, TRI components optimism (0,800) and innovativeness (0,825) have a positive association with the intention to utilize OASs'.

Moreover, in a study conducted in Ghana on hybridizing an extended technology readiness index with a technology acceptance model to predict e-payment adoption in Ghana, the researchers extended the technology readiness model and examined its effect on the technology acceptance model in predicting e-payment technology acceptance and use. Online surveys were administered to users of e-banking and e-money in six important cities on the Gold Coast.

In a study conducted by Seol et al. (2017) studying control factor relationships on intention to use smart devices, TR and UTAUT were the targets of the investigation, upon which a set of questionnaires were employed for hypothesis testing. The analysis was undertaken, including frequency, reliability, and confirmatory. The results indicated that TR significantly altered social influence, effort expectancy, facilitating condition, subjective enjoyment, and performance expectancy. Negative TR had a significant effect on the factors indicated above. TR has no behaviourally significant influence on the intention to use. There is a considerable behavioural effect on performance anticipation, enabling conditions, and felt satisfaction. In addition, use behaviour has a considerable favourable effect on behavioural intention.



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Chen and Lian (2021) examine the interaction mechanisms of technological preparedness, corporate culture, and technology acceptability. The study indicated that optimism has a substantial impact on technology readiness and the adoption of new technology. The study also indicated that firms with a culture of positive and optimism are more likely to successfully deploy new technology. This shows that organizational optimism can also influence technology adoption.

Kim and Park (2020) investigated the role of technology readiness and discomfort in technology acceptability in companies. The study revealed that discomfort is a key barrier to technology adoption in corporate settings. The findings underline the necessity for efforts to ease users' discomfort and anxiety to enhance technology readiness and adoption.

Lee and Lin (2019) examined technical preparedness and technology acceptance among smartphone users found a strong link between the two, showing that individuals with higher levels of insecurity tend to be more reluctant to adopt new technologies, largely out of concern over security and privacy risks. This finding highlights the importance of addressing users underlying fears in order to improve technology readiness and adoption rates. In related study, Wu and Wang (2021) examined how perceived security and trust influence technology readiness and adoption. Their findings indicated that organisations need to actively build users confidence and sense of security in new technologies to achieve successful adoption outcomes. Therefore, it is obvious that eliminating insecurity is vital to encouraging technology adoption.

Li et al. (2019) explored how optimism and technology readiness shape technology adoption, finding that individuals with higher optimism levels were more inclined to accept new technologies than those with lower optimism. This suggests optimism plays a key role in shaping how ready individuals are to embrace emerging technologies. Park and Choi (2018) examined the role of innovativeness in technology readiness and acceptance within the context of mobile banking adoption, findings that innovativeness has a positive effect on individuals' technology readiness, further underscoring how central this trait is to the adoption process. Wang et al. (2022) investigated the impact of discomfort on technology adoption: A moderated mediation model. The study indicated that persons who experience significant degrees of discomfort with technology are less likely to adopt new technologies.

According to a study by Zhang et al. (2020) on the impact of innovativeness on technology adoption, it considers wearable fitness gadgets. The study demonstrates that persons with high degrees of innovativeness are more likely to accept new technology due to their inherent predisposition towards experimentation. Moreover, the study emphasized that firms that encourage and support employee creativity have higher success rates in deploying new technology. This underlines the necessity of building a culture of innovation within firms to encourage technology adoption. In view of the mixed findings provided by the prior studies presented above, some findings show significant results, while others are insignificant. The following hypotheses are developed as the expectation of this research: **H₁₁**: Optimism has positive impact on adoption of e-tax filing; **H₁₂**: Innovativeness has positive impact on adoption of e-tax filing

3. Methodology

This study is a cross-sectional survey research design because it intends to collect data from different small and medium enterprises operating in Jigawa State at one point in

time. The study populations were small and medium enterprises operating in Jigawa State, which are thirteen thousand nine hundred and twelve (13,912) registered with SMEDAN as of December 31, 2025. Therefore, 390 sample sized was drawn from the total population using the structure of the Taro Yamane (1967) sampling model.

The structured Taro Yemane (1967) sampling model is used to determine the appropriate sample size for this investigation and to support its adequacy. The following is the applied formula:

$$n = \frac{N}{1 + Ne^2} \quad \text{therefore,} \quad n = \frac{13912}{1 + 13912(0.05)^2} = 399.9$$

Where n = number of samples, N = total population, e = error tolerance, and 1 = adjusted constant. Therefore, the required sample size is approximately 400. The study adopts a random sampling approach. Questionnaires were utilized as an instrument for data collection in this study. The data was analyzed using SMART Partial Least Squares (PLS)-Structural Equation Modeling (SEM).

4. Results and Discussion

In this study, SmartPLS 4.0 was used to measure the Measurement Model and Structural Model as well as determine the significance of the model. Evaluation of the measurement model involved testing for indicator reliability, internal consistency reliability, convergent validity, discriminant validity, and overall model fit (Henseler, Hubona & Ray 2014). Figure 2 in this study illustrates the complete measurement model before any components were removed.

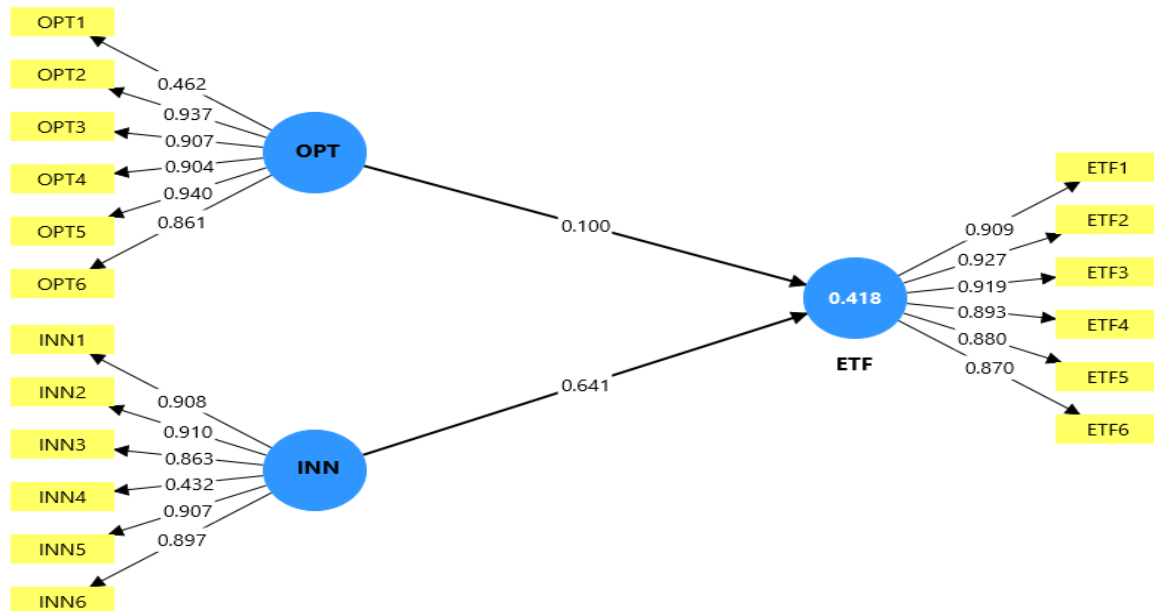


Figure 2: Measurement Model of the Latent Constructs.

Source: Researcher's compilation with PLS-SEM 4.0 (2025)

Indicator Reliability

The external loadings of each underlying construct are employed to assess the dependability of the measurements (Hair et al., 2013). Traditionally, an item is considered



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reliable if its loading is at least 0.70 (Hair et al., 2011). However, as suggested by Hair et al. (2013) an item with a loading of 0.4 may be retained if removing it would reduce the overall reliability.

Specifically, according to Hair et al. (2011) items with outer loadings between 0.40 and 0.70 should be removed from the scale if their exclusion leads to an improvement in composite reliability and average variance explained. Thus, following the criteria outlined by Hair et al. (2011) and supported by Hair et al. (2013) 18 items examined in this study, only 16 items were retained. Table 1 presents details regarding these retained items alongside their respective loading results.

Internal Consistency Reliability

Reliability refers to how consistently and dependably a scale measures the construct it is intended to assess (Ramayah et al., 2018). Among the various approaches used to evaluate reliability in quantitative research, internal consistency is one of the most commonly applied. Composite reliability and Cronbach's alpha coefficient are the two metrics most frequently used to demonstrate this. These measures evaluate how well the indicators collectively measure a particular construct.

Despite both being popular in PLS route modeling literature, many scholars argue that composite reliability provides a more robust assessment of internal consistency compared to Cronbach's alpha (Hair et al., 2011; 2013). In fact, Cronbach's alpha has been criticized for underestimating true internal consistency reliability of constructs, leading to increased preference for composite reliability (Hair et al., 2016). Hair et al. (2011) suggest that for exploratory research, the minimum threshold should be 0.60 while it should be at least 0.70 for confirmatory studies when using composite reliability as an indicator of internal consistency. Table 1 presents the findings of internal consistency reliability in the current study.

Convergent Validity

Validity refers to the degree to which a scale accurately measures the established operational definition of the intended phenomena (Hair et al., 2014). It also indicates the ability to assess research variables through a questionnaire (Ramayah et al., 2018). Convergent validity evaluates the level of agreement among multiple items addressing a specific concept (Hair et al., 2010). The commonly utilized measure for convergent validity is Average Variance Extracted, with a recommended threshold of at least .5 (Hair et al., 2011; Hair et al., 2013). Table 1 presents data showing that AVE values for all constructs meet or exceed this minimum criterion.

Table 1

Indicator Loadings, Composite Reliability, and AVE of Latent Constructs

Latent construct	Item	Item Loading	Composite Reliability	AVE
E-tax Filing Adoption	ETF1	0.909	0.953	0.810
	ETF2	0.927		
	ETF3	0.919		
	ETF4	0.893		
	ETF5	0.880		
	ETF6	0.870		
Innovativeness	INN1	0.911	0.943	0.810
	INN2	0.914		
	INN3	0.867		
	INN5	0.909		
	INN6	0.899		
Optimism	OPT2	0.943	0.966	0.840
	OPT3	0.915		
	OPT4	0.910		
	OPT5	0.948		
	OPT6	0.864		

Source: Researcher's compilation with PLS-SEM 4.0 (2025)

Table 1 displays the composite reliability of all latent constructs; with values are 0.953, 0.943 and 0.966. These values exceed the minimum requirement of .60 for exploratory study, demonstrating strong internal consistency across all latent components. The average variance extracted values range from .810 to .840 and surpass the minimal requirement of .50, indicating excellent convergent validity for the constructs.

Discriminant Validity

Discriminant validity refers to the degree to which a specific underlying construct distinguishes itself from others (Hair et al., 2022). This means that, in order for an underlying concept to demonstrate discriminant validity, it should exhibit more shared variation with its designated indicators compared to any other underlying concept in the model (Hair et al., 2011). The Fornell-Larcker criterion is commonly used for assessing the discriminant validity of a construct. According to this criterion, in order for a construct to achieve discriminant validity, the square root of its Average Variance Extracted value should be greater than its inter-construct correlations with other constructs (Fornell & Larcker, 1981; Hair et al., 2011).

Sarstedt et al., (2021), state that establishing discriminant validity is essential as it ensures that the scale utilized measures a distinct construct. Table 2 shows the square roots of AVE and by comparing these values with inter-construct correlations, it can be observed that there is less shared variance between pairs of constructs than their respective square roots of AVEs indicate. Thus, based on the Fornell-Larcker criterion, it was confirmed that

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good discriminant validity was achieved through comparing the square roots of AVEs and inter-construct correlations between constructs within this measurement model.

Table 2

Discriminant Validity

	ETF	INN	OPT
ETF	0.900		
INN	0.640	0.900	
OPT	0.632	0.835	0.917

Source: Researcher's compilation with PLS-SEM 4.0 (2025)

Note: ETF = E-tax Filing; OPT=Optimism; INN=Innovativeness

Correlation Matrix

Table 3 presents the correlation matrix between the exogenous and endogenous latent constructs. The results indicate that there is no multicollinearity, as all the independent variable scores are below the cut-off value of 0.9 (Hair et al., 2016). Furthermore, this outcome could be supported by conducting a Variance Inflation Factor test to examine multicollinearity. According to Ramayah et al. (2018), data will be free of multicollinearity when the VIF value is less than 10. Table 3 also includes the VIF values and tolerance for this study's analysis.

Table 3

Matrix Constructs

	ETF	OPT	INN	VIF
ETF	1			4.091
OPT	0.152	1		3.7
INN	0.296	0.215	1	1.139

Source: Researcher's compilation with PLS-SEM 4.0 (2025)

Evaluation of the Significance of Path Coefficients

The importance and applicability of the PLS-SEM structural model were assessed by examining the t-statistics and p-values derived from 10,000 bootstrapped samples (Hair et al., 2011). The statistical estimates of the path coefficients for the structural model are presented in Figure 3 and Table 4.

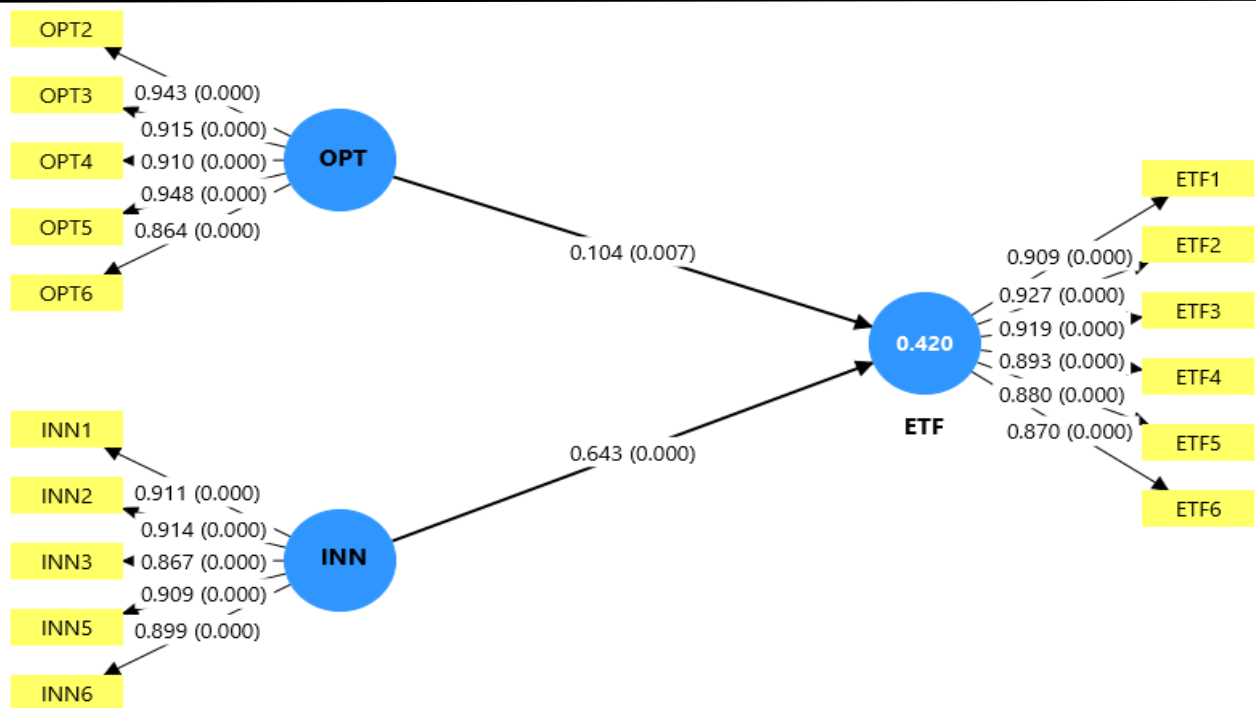


Figure 3: PLS-SEM Structural Model (2025)

Evaluation of Coefficient of Determination (R^2)

In PLS analysis, following the study of the fitting of measurement models, it is prominent to deal with the fitting of the structural model. One key measure, among others, for analyzing the fitting of the structural model is determination coefficient (R^2). R^2 is a criterion that shows the effect of an exogenous variable on an endogenous variable, whose value is only determined for endogenous constructs of the model.

As for endogenous constructs, the value of this criterion is zero. Three values; 0.19, 0.33 and 0.67 are considered as a criterion for R^2 's weak, medium, and considerable levels correspondingly (Hair et al., 2019). According to Figure 3 above, the value of R^2 for the model's endogenous variables in this study is 0.420, which suggests the selected exogenous factors of the study have a variation level of 42.0% on e-tax filing adoption among SMEs in Jigawa state Nigeria. The finding shows that the predictor variables explained 42.0% of the variance in e-tax filing adoption among SMEs in Jigawa state Nigeria, while other factors not included in the model explained the remaining 58.0%. Looking at this value, the model is satisfactory and nevertheless substantial based on Hair et al. (2019).

Table 4

Structural Estimates

Hypotheses	Relationships	B	T-statistics	P-value	Decision
H ₁	OPT → ETF	0.104	26.159	0.007	Supported
H ₂	INN → ETF	0.643	2.718	0.000	Supported

Source: Researcher's compilation with PLS-SEM 4.0 (2025)



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The results of the structural model analysis provide important insights into the factors influencing the adoption of e-tax filing among SMEs in Jigawa State. The findings indicate that optimism has a significant positive effect on the adoption of e-tax filing ($\beta = 0.104$, $p = 0.007$). The finding indicates that SME operators who exhibit a favourable attitude towards technology are more inclined to adopt electronic tax filing systems, largely because they perceive such systems as useful, efficient and capable of enhancing business operations.

A positive outlook towards technology may reduce resistance to technological change while strengthening users' confidence in the benefits and usefulness of innovative systems. This finding is consistent with Nugroho and Fajar (2017), who reported that optimism significantly contributes to the acceptance of web-based technological systems. Similarly, Blut and Wang (2019) identified optimism as an important dimension of technology readiness that positively influences technology usage across various contexts. However, the finding differs from that of Pandey (2023), who found that optimism had no significant effect on technology adoption in the context examined.

Furthermore, the study established that innovativeness has a positive and statistically significant effect on the adoption of e-tax filing ($\beta = 0.643$, $p = 0.000$). This result implies that SMEs whose operators demonstrate a greater willingness to explore, experiment with, and embrace new technologies are more likely to adopt electronic tax filing systems. Innovativeness represents an individual's willingness to explore novel technological solutions and adapt to changes associated with digital processes.

The strong positive relationship observed in this study suggests that innovative SME operators are more receptive to electronic tax systems because they are generally more open to new ideas, technological developments and alternative ways of performing business activities. This finding supports Nugroho and Fajar (2017), who identified innovativeness as a significant determinant of technology acceptance. It is also consistent with Choi and Kim (2016), who found that personal innovativeness enhances the adoption of emerging technologies. Furthermore, Blut and Wang (2019) identified innovativeness as a fundamental component of technology readiness and emphasized its important role in shaping technology usage behavior.

5. Conclusion and Recommendations

Based on the findings of the study, it is concluded that technological readiness, particularly optimism and innovativeness, has a positive and statistically significant influence on the adoption of electronic tax filing among SMEs in Jigawa state, Nigeria. The study further concludes that optimism and innovativeness are important determinants of SMEs willingness to embrace and utilize electronic tax filing systems. The positive influence of these dimensions suggests that SMEs with favourable attitudes towards technology and greater willingness to explore new technological solutions are more likely to adopt e-tax filing systems.

Based on these conclusions, the study recommends the following:

- i. Relevant tax authorities and other stakeholders should intensify awareness campaigns aimed at educating SME operators about the benefits of electronic tax filing. Such campaigns should emphasize the convenience, efficiency, time saving benefits and potential long-term advantages of using e-tax filing

- systems. Practical demonstration and success stories from SMEs that have successfully adopted the system could also be used to build confidence and encourage wider adoption. In addition, workshops, training programme, and innovation-oriented initiatives should be organized to enhance SMEs' willingness and capacity to embrace new digital technologies.
- ii. Tax authorities should collaborate with relevant SME associations and other stakeholders to establish a supportive ecosystem that facilitates the adoption of electronic tax filing in Jigawa State. This could include providing technical assistance, user support, simplified procedures, and accessible guidance for SMEs experiencing difficulties with the system. Furthermore, appropriate incentives, such as recognition or other legitimate benefits for early adopters, could be considered to encourage SMEs to transition from traditional tax filing methods to electronic tax filing systems.
 - iii. A feedback loop should be established to allow SMEs to share their experiences with the system. Regular updates and improvements based on user feedback can further improve adoption rates and user satisfaction.

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